ISNAR's Achievements, Impacts, and Constraints: An assessment of organizational performance and institutional impact

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June 1998

isnar

International Service for National Agricultural Research

Citation

Mackay, R., S. Debela, T. Smutylo, J. Borges-Andrade & C. Lusthaus (1998). *ISNAR's achievements, impacts, and constraints: an assessment of organizational performance and institutional impact.* The Hague: International Service for National Agricultural Research.

ISBN: 92-9118-031-9

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Foreword

The International Service for National Agricultural Research (ISNAR) is one of 16 international centers affiliated with the Consultative Group on International Agricultural Research (CGIAR). CGIAR was established in 1971 to contribute to food security, poverty alleviation, and the conservation of natural resources through applied international R&D activities.

ISNAR's mandate within CGIAR is to strengthen agricultural research institutions in developing countries through applied research, training, and advisory services in the areas of agricultural research policy, organization, and management.

Impact assessment and evaluation have been important concerns in CGIAR since its earliest days. A system of quinquennial external program and management reviews (EPMR) was established in the 1970s. Coordinated by the CGIAR's Secretariat and Technical Advisory Committee, external reviews are the cornerstone of center accountability to donors.

Over the years, CGIAR centers have carried out a number of impact studies. Most of these have been economic evaluations of the impact of new technologies on production, employment, and income. Recently, attention has been turning to the assessment of research impacts on natural resources and the environment. In contrast, little attention has been paid to the "institutional impact" of CGIAR centers—the impact on institutional capacity and the performance of national agricultural research organizations and systems.

As support for agricultural research wanes and governance and accountability issues come to the fore, donor agencies and CGIAR centers are being asked to provide better evidence of their impact. Since a major goal of CGIAR is to strengthen the capacity and performance of national agricultural research systems (NARS), there is a need for increased and improved assessment of institutional impact.

ISNAR first assessed its impact in 1991, in preparation for its second EPMR. The task proved to be challenging because no evaluation methodology was readily available. Unlike commodity research, where production economics can be used to assess the value of research impacts at the farm level, there is no analogous methodology for assessing the impacts of ISNAR's programs on the institutional capacity and performance of NARS. In the absence of a rigorous evaluation methodology, ISNAR country officers used a checklist approach to assess the results of ISNAR's work. This initial in-house effort produced useful information and insights into institutional development processes. But it lacked methodological rigor and credible evidence of the results of ISNAR's work.

In 1996, ISNAR had its third external program management review. The timing of this EPMR, in light of the current initiative to strengthen impact assessment and evaluation in the CGIAR, presented ISNAR with both a challenge and an opportunity: to develop a credible, feasible methodology for assessing ISNAR's institutional impacts since the last external review, while simultaneously providing leadership in the CGIAR in developing methods for assessing institutional impacts.

For its second impact assessment, ISNAR decided to engage an external team of evaluation specialists. This was to tap external expertise and knowledge, and to enhance the credibility of the evaluation report with external stakeholders, in particular, with the external review panel.

Five evaluators were contracted to form an impact assessment team:

- Jairo Borges-Andrade, a psychologist and evaluator at the University of Brasilia
- Seme Debela, an experienced agricultural research manager and evaluation practitioner from Ethiopia
- Charles Lusthaus, an evaluator with McGill University and Universalia in Montreal, and specialist in institutional assessment
- Ronald Mackay, an educator and program evaluator from Concordia University in Montreal (team leader)
- Terry Smutylo, head of evaluation at IDRC

The assessment exercise began with a planning workshop in June 1996 and was formally completed when the evaluation report was delivered to ISNAR management and the external review panel on October 15, 1996. However, in another sense, this assessment was one of the first steps in a longer-term effort at ISNAR to develop and apply institutional assessment methods.

In 1997, Ron Mackay spent a sabbatical year at ISNAR, continuing the development and application of methods for assessing organizational performance and institutional impacts. During that same year, we also received many useful comments and suggestions for improving the 1996 evaluation report. Based on this feedback, the report was revised for publication in its present form.

I would like to take this opportunity to thank the impact assessment team and my ISNAR colleagues who collaborated in the assessment and, especially, our many collaborators around the world who took the time from their busy schedules to provide the information on which the team prepared its reports, and based its conclusions and recommendations.

Stein W. Bie
Director General ISNAR
June 1998

About the Authors

Jairo E. Borges-Andrade is an organizational psychologist with a Ph.D. in instructional systems from the Florida State University–Tallahassee. After working 14 years in research and development in the areas of human resources and strategic management at the Brazilian Corporation for Agricultural Research (EMBRAPA). He became full professor in the Department of Social and Work Psychology, Institute of Psychology, University of Brasília, Brazil, where he teaches and advises at the undergraduate and graduate levels (master and doctoral) and engages in research and consulting. His current areas of interest are organizational behavior, training, organizational evaluation and science and technology management.

Seme Debela graduated with a B.Sc. degree in plant sciences from the former Haile-Silassie University, Alemaya College of Agriculture (Ethiopia) in 1963. He obtained his M.Sc. degree in agronomy from the University of California–Davis in 1967, and his Ph.D. degree in plant breeding/genetics from the Iowa State University, Ames, in 1972. He holds a certificate in the subject of management of public enterprises.

Dr. Debela's work experience with various government organizations ranges from research officer in agronomy at one of the agricultural research stations in Ethiopia's former Institute of Agricultural Research to General Manager (equivalent to Director General) of the same institution. He has also served as Deputy Commissioner of the Ethiopian Science and Technology Commission and as Head of the Research and Advisory Department of the former Ministry of State Farms Development.

While in the government's service, Dr. Debela served as task force leader for various commodity research programs in a number of high-level national committees. He has also held positions in international programs, for example, as a member of the Board of Trustees of the International Maize and Wheat Improvement Center (Mexico) and of the former International Livestock Centre for Africa, as well as a member of CGIAR'S TAC. He has attended numerous international seminars and conferences, at times fulfilling the role of national delegation leader.

After retiring from government service in 1992, Dr. Debela has been active as a private consultant, engaged in activities such as project formulation and evaluation in agricultural research and/or development, both at national and international levels. This consultancy has included activities with ISNAR and ASARECA.

Charles Lusthaus, Ph.D. is an Associate Professor in the Department of Administration and Policy Studies, McGill University, and a partner in Universalia Management Group, a Montreal-based management consulting firm. His expertise lies in the areas of educational administration, organizational theory, and institutional evaluation and change. Dr. Lusthaus is also Faculty Advisor to the Centre for Educational Leadership, McGill University.

Ronald Mackay was educated at the Universities of Aberdeen and Edinburgh in Scotland. Between 1967 and 1976, he taught in the field of language education at the Universities of Bucharest (Romania), Newcastle upon Tyne (U.K.), and la Universidad Nacional Autónoma de México (UNAM, México D.F.), where he established the Centro de Investigación y Desarrollo within the Centro de Enseñanza de Lenguas Extranjeras. In 1976 he joined Concordia University (Montréal, Quebec, Canada), where he is a Professor of Education and teaches courses in educational assessment, and program design, management, and evaluation, as well as language education. He obtained his Ph.D. in educational sciences from the

University of Montreal in 1986 with an evaluation of Inuit education in the Canadian Arctic. He has been involved in a broad range of program evaluation projects concerned with education, health, management, and agriculture in the United Kingdom, Singapore, Indonesia, Kuwait, Latin America, and the Caribbean, as well as several Canadian provinces and the Northwest Territories. In 1995, he was Visiting Scholar at the Scottish Centre for Research in Education (Edinburgh, Scotland) and, in 1997, a Senior Fellow at ISNAR (The Hague, the Netherlands). He has been involved in agriculture in Scotland, the Canary Islands, Quintana Roo (México) and, for the past 20 years, in Canada, where he has developed a particular interest in total land management and the maintenance of "rural character."

Terry Smutylo has a masters degree in African studies from the University of Ghana and an undergraduate degree in sociology from the University of Toronto. As Director of Evaluation for the International Development Research Centre (IDRC), he is responsible for the creation and maintenance of IDRC's performance monitoring system. He supervises and conducts evaluation and policy studies relative to IDRC's programs and projects. Mr. Smutylo's recent work has included studies on the effectiveness of developing country-based research networks; the development of methodologies for assessing institutional capacity and performance; and monitoring the effects and sustainability of development initiatives. With over 19 years' experience in research in developing countries throughout the southern hemisphere, Mr. Smutylo is currently based in IDRC's headquarters in Ottawa.

Acknowledgments

We are grateful to all those individuals who took the time from their busy schedules to respond to the telephone surveys and to meet with us during our visits to Kenya, Morocco and Uruguay. In addition, we would like to thank the following individuals who contributed in one way or another to the assessment exercise and the preparation of this report

Participants in the June 1996 planning meeting in The Hague:

- Govert Gijsbers
- Helen Hambly
- Douglas Horton
- Francis Idachaba
- Willem Janssen
- Bradford Mills
- Warren Peterson
- M.M. Rahman

ISNAR Management:

- C. Bonte-Friedheim
- Howard Elliott
- Paul Perrault
- Hélio Tollini

ISNAR staff members who helped in preparing the inventory of ISNAR outputs:

- Austin N. Bosso
- Mirela Breedveld-Zoita
- Helen Hambly
- Warren Peterson
- Michele Wilks

ISNAR staff members who commented on the draft reports:

- Govert Gijsbers
- Willem Janssen
- Bradford Mills
- Hélio Tollini
- Carlos Valverde

ISNAR board members and others who commented on the summary report:

- A.D. Bennett (ODA)
- Just Faaland (ISNAR BOT)
- Oswaldo Feinstein (IFAD)
- Eduardo Indarte (INIA, Uruguay)
- Jossette Murphy (World Bank)
- C.G. Ndiritu (KARI, Kenya)
- Carl-Gustaf Thornström (SIDA)
- Sami Sunna (ISNAR BOT)

Members of the external program and management review panel:

- Jacques Brossier
- Guido Gryseels (TAC Secretariat)
- Kenneth Hoadley
- Jesus Moncada de la Fuente

- Selcuk Özgediz (CGIAR Secretariat)
- Samuel Paul
- Mandi Rukuni
- Paramjit S. Sachdeva (CGIAR Secretariat)
- Roberto Vazquez Platero

Staff of the International Development Research Centre, who conducted the English and French telephone surveys:

- Leona Ba
- Sarah Earl
- Amira Iskander
- Muthoni Mwangi
- Eva Rathgeber
- Cerstin Sander
- Hilary Sime
- Say-Yin Tan
- Tricia Wind

Staff members of the University of Brasilia, who conducted the Spanish and Portuguese-language telephone surveys:

- Katia Puente Palacio
- Maria do Carmo Martins and his doctoral student

Those who were involved in editing, graphics and production of the report:

- Robin Baur
- Luis Dupleich
- Claudia Forero
- Douglas Horton

Acronyms

ANOVA	one-way analysis of variance
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
CGIAR	Consultative Group on International Agricultural Research
DEAR	Direction de L'enseignement Agricole et de la Recherche
DERD	Direction de l'Enseignement, la Recherche et du Développement – Morocco
DIF	Division de l'Information et de la Formation
EPMR	external program and management review
FSR	Farming Systems Research
GOK	Government of Kenya
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit – Germany
HUB	Humboldt University Berlin – Germany
IARC	International agricultural research centers
IBS	Intermediary Biotechnology Services
ICER	internally commissioned external review
ICIPE	International Center of Insect Physiology and Ecology
ICRAF	International Centre for Research in Agroforestry – Kenya
IDRC	International Development Research Centre
IER	Institut d'Economie Rurale – Mali
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute – U.S.A.
ILRI	International Livestock Research Institute
INFORM	Information for agricultural research managers
INIA	Instituto Nacional de Investigación Agropecuaria – Uruguay
INRA	Institut National de la Recherche Agronomique – Morocco
ISNAR	International Service for National Agricultural Research
KARI	Kenya Agricultural Research Institute
LAC	Latin America and the Caribbean
MIAC	Midamerica International Agriculture Consortium
MIS	management information system
MOALD	(former) Ministry of Agriculture and Livestock -Kenya
MOALDM	(current) Ministry of Agriculture, Livestock, and Marketing -Kenya
MRTTT	Ministry of Research, Technical Training, and Technology -Kenya
NARO/NARI	national agricultural research organization/institute
NARS	national agricultural research system(s)
NGO	non-governmental organization
ODA	Overseas Development Administration – United Kingdom
PRA	Participatory Rural Appraisal
SIDA	Swedish International Development Cooperation Agency
SPAAR	Special Program for African Agricultural Research (World Bank)
SSA	Sub-Sahara Africa
TAC	Technical Advisory Committee
TOR	terms of reference
TOT	training of trainers
WANA	West Asia and North Africa

Chapter One – Summary Report: ISNAR's Achievements, Impacts, and Constraints, 1991-1996

R. Mackay and S. Debela
with
T. Smutylo, C. Lusthaus, and J.E. Borges-Andrade

1. Introduction

The International Service for National Agricultural Research (ISNAR) was established in 1979 by the Consultative Group on International Agricultural Research (CGIAR) with a mandate to assist developing countries in bringing about lasting improvements in the performance of their national agricultural research systems and organizations. It began operations in September 1980. ISNAR is a nonprofit autonomous institute, international in character and apolitical in its management, staffing, and operations. It is financed by several members of CGIAR, a group of donors that includes national governments, development banks, international organizations, and foundations. ISNAR is unique in that it is the only member of the CGIAR system with a mandate to focus specifically on institutional development within national agricultural research systems (NARS).

ISNAR is governed by an international Board of Trustees, and managed by a Director General and a Deputy Director General. It has 39 internationally recruited staff members, who are assisted by 14 locally recruited research assistants and 40 support staff members. In recent years, the ISNAR budget has been around US$10 million. Between 55 and 60% of the budget was provided through core contributions of CGIAR, the remainder being acquired through special projects. ISNAR's work is largely demand driven, in response to requests from national agricultural research organizations (NAROs) to enhance their capacity and to establish effective research policies, strategies, and management systems.

ISNAR is structured to accomplish its mandate through two programs: (1) the Policy and System Development Program, and (2) the Management Program. Both integrate advisory services, research, and training to meet the needs of NARS. ISNAR programs are supported by specialized service units comprising training, computer services, publications, and library services. Since its creation, ISNAR has developed collaborative relations with research entities in some 90 developing countries.

Purpose of the study

This study contributes to the documentation ISNAR provided in evidence of its performance for its third quinquennial external program and management review (EPMR). The Technical Advisory Committee (TAC) of the CGIAR organizes an external review of each member center on behalf of the CGIAR approximately every five years. The EPMRs are conducted by independent panels of experts contracted by TAC (Özgediz 1993).

The report serves two main purposes: (1) to provide the EPMR panel with an independent assessment of ISNAR achievements, impacts, and constraints in its work with NARS, and (2) to provide ISNAR with suggestions regarding areas where it might improve its performance. These purposes provided the team with the opportunity to undertake applied research to develop and pilot a methodology for assessing the impact of institutional development work. It is a methodology of potential use to ISNAR, other CGIAR centers, NARS, donors, and development agencies. In this sense, the study represents a step in the development of ISNAR's capacity in the assessment of institutional impact.

Conceptual framework

To review ISNAR's achievements, impacts, and constraints, a conceptual model was developed by the external evaluation team and ISNAR professional staff during a week-long workshop in The Hague, in June 1996. A brief account of the workshop activities and outputs is provided in Chapter 2. The model was elaborated from a framework for institutional assessment developed by Lusthaus (a member of the evaluation team) and colleagues (Lusthaus, Anderson, and Murphy 1995; Lusthaus et al. 1996). This framework includes four dimensions for institutional assessment:

- organization's external environment
- organizational motivation
- organizational capacity
- organizational performance

the fourth (organizational performance), being a function of the first three. The evaluation team extended this framework to account for a fifth function, institutional impact, i.e. the impact of an international organization such as ISNAR on a client organization such as a NARO.

The extended model portrays ISNAR exerting an impact on the environment, motivation, and capacity of a NARO and, indirectly, on its performance. However, while ISNAR's delivery mechanisms (services, research, and training) may have a measurable effect upon a NARO's environment, motivation, or capacity, the NARO's subsequent performance is beyond the control of ISNAR and is affected by many additional factors.

To achieve the purposes of this study, data were collected on ISNAR's immediate impacts on the *external environment, the organizational motivation* and *the capacity* of NAROs (Exhibit 1.1). An effort was also made to extrapolate these impacts to ascertain the *performance* of the NAROs.

A checklist of the main components of a NARO's environment, motivation, capacity, and performance was elaborated based on Lusthaus, Anderson, and Murphy (1995), Lusthaus et al. (1996), and the TAC Secretariat (1996). This checklist guided data collection and analysis in all the evaluation studies (Exhibit 1.2). A complete version is included in the Annex to Chapter 2.

Study methodology

The study team developed the methods in conjunction with a group of ISNAR professionals. It was presented to all ISNAR staff for feedback and suggestions during a week-long working meeting in The Hague in June 1996. That framework and the design of the subsequent studies are the result of input not only from ISNAR staff, but also from a large number of ISNAR documents with which the team was provided as background. An account of the activities of that meeting and the outcomes are described in Chapter 2.

Understanding ISNAR's achievements and impacts requires documenting its processes, outputs, outcomes, and clients. As Rummler and Brache (1995) state, it is "essential at some point to describe what [an organization] does and how it does it." The various methodologies used in this study (surveys, case studies, and document analyses) were designed to do just that—to understand what it is that ISNAR does, and how it achieves its results.

Exhibit 1.1 Model illustrating organizational performance and institutional impact

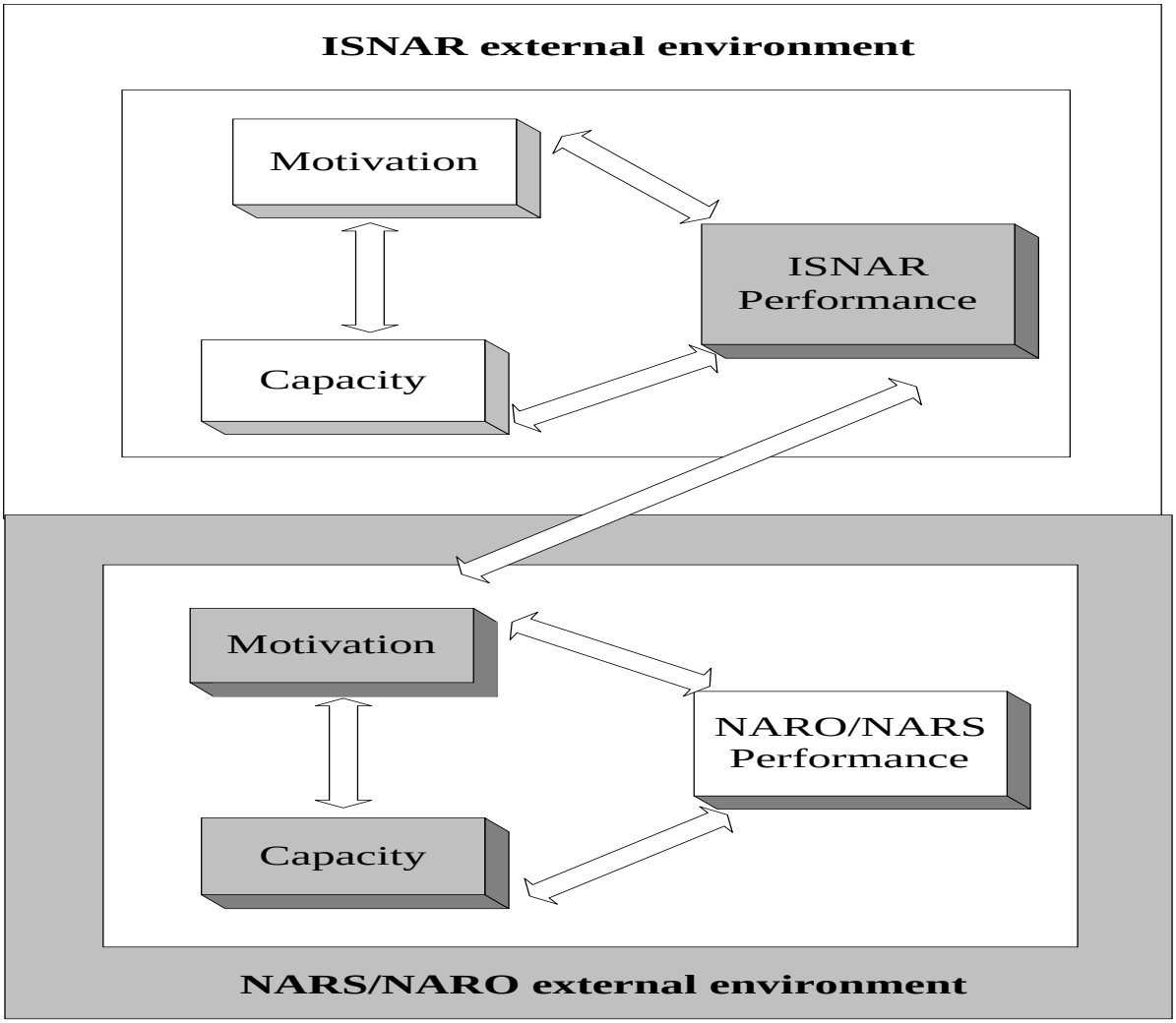

Exhibit 1.2 Four dimensions for organizational assessment

1. The external environment
– administrative and legal environment
– external political environment
– sociocultural environment
– technological environment
– economic environment
– stakeholders
– infrastructure
– policy/natural resources environment

2. Institutional motivation
– organization's history
– mission
– culture
– incentives/reward schemes

3. Institutional capacity
– strategic leadership
– program planning
– management and execution
– resource allocation and management
– linkages and coordination with clients, partners, government policymakers, and external donors

4. Institutional performance
– effectiveness with which the organization achieves its mission and goal
– efficiency of resource use
– organization's sustainability in terms of its continued relevance to stakeholders

ISNAR professional staff have had the opportunity to correct any factual errors in this synthesis report and in the component evaluation studies (Chapter 3–8). The component studies contain a wealth of information, detail, and analyses that will continue to provoke discussion. The study team, including members both internal and external to ISNAR, supports this discourse as a normal part of the sociopolitical process of evaluation research and utilization.

Relationship between the conceptual framework and the methodology

Exhibit 1.3 demonstrates how the data obtained from the five types of evaluation studies provide information on ISNAR's performance and its impacts on the external environment, motivation, capacity and, to a lesser extent, the performance of NAROs. In addition, the studies were designed to collect information on ISNAR achievements, impacts, and constraints.

Exhibit 1.3 Evaluation studies and their contributions to four dimensions of organizational assessment

Types of evaluation study	Organizational environment	Organizational motivation	Organizational capacity	Organizational performance
Survey of agriculture leaders	of NAROs	of NAROs	of NAROs	of ISNAR
Survey of ISNAR stakeholders	of NAROs			of ISNAR and of NAROs
Country case studies	of NAROs	of NAROs	of NAROs	of ISNAR
Meta-Evaluation of ISNAR reviews				of ISNAR
Review of inventory of ISNAR outputs				of ISNAR

Questions driving the evaluation

ISNAR and the EPMR panel required an informed response to the question, *What have been ISNAR's achievements, impacts, and constraints over the five-year period since the second external program and management review in 1991?* The team and ISNAR staff members jointly developed specific questions and indicators to elicit responses from two groups familiar with ISNAR and its work: ISNAR stakeholders and agricultural research leaders. These questions and indicators can be found in the methodological annexes to Chapter 3 (Annex 3.5) and Chapter 4 (Annex 4.3).

Data collection

Five approaches were employed to obtain information for evaluating the performance of ISNAR. Each focused on a specific source of information and employed data collection methods designed for that source. Both "quantitative-objective" and "quantitative-subjective" measurement techniques were employed.[1] Such integrated metrics have been recognized as

[1] Quantitative-objective measurement techniques generate "numerical indicators of R&D performance using well-defined algorithms that focus on tangible, countable dimensions." Quantitative-subjective techniques are based on "intuitive judgments that are converted into numbers" (Werner and Souder 1997).

"the most accurate, comprehensive, effective, and versatile" techniques for organizational performance measurement (Werner and Souder 1997). The overall result was a study with multiple lines of inquiry into ISNAR's achievements, performance, and impacts—an approach with precedents in the evaluation of public services (Paul 1995). Designed to be complementary and to permit cross-validation of data and findings, the five research approaches are outlined in the following paragraphs.

Survey of agricultural research leaders. Quality management stresses customer satisfaction as a key performance indicator (Allen 1996; Cook et al. 1995). Because agricultural research managers are ISNAR's primary clients and have immediate and direct experience with ISNAR's activities, products, and services, a survey was carried out to draw on their opinions. Telephone interviews were conducted with 62 leaders of NAROs and 4 leaders of regional organizations, gathered from a sample list of 100 participants in recent regional fora and international meetings organized by the CGIAR and others.

Survey of ISNAR stakeholders. Telephone interviews were also conducted with 24 ISNAR stakeholders, or staff members of regional or international development organizations who work with ISNAR (see Chapter 3, footnote 1).

Country case studies. Case study research is able to focus on the current processes by means of which an organization brings about its results (Yin 1994). Kenya, Morocco, and Uruguay were selected for intensive field-level study of ISNAR's work. Key documents dealing with ISNAR's collaboration with each country were studied. Interviews were conducted with key persons (Kenya 63; Morocco 32; Uruguay 14), including the senior management cadre of the NARO, the agricultural universities, the Ministry of Agriculture, and other entities and stakeholders. A common checklist was used to elicit information about the environment, motivation, capacity, and performance.

Meta-Evaluation of ISNAR's reviews. An organization can benefit from an internal performance assessment system (Love 1991). ISNAR organizes an annual internal program review and, recently, it organized several internally commissioned external reviews (ICERs) of selected program thrusts. ISNAR's reviews were examined in some detail to determine the potential contribution they make to ISNAR as a learning organization: 17 ICERs and other reviews were examined to assess their quality and utility (Senge 1994). The criteria used appear in Annex 8.2.

Inventory of ISNAR outputs. Outputs constitute one type of performance indicator which link inputs and outcomes (Tuck and Zaleski 1996). An inventory of outputs was compiled by ISNAR professional staff in a database including ISNAR documents and training (1991–1996). The inventory was used to identify ISNAR achievements and to assist in the analysis of the survey of NARS leaders. Some summary tables are included in Chapter 4.

Exhibit 1.4 illustrates the relationship between the evaluation studies, the key questions driving the evaluation, the sources from which information was obtained, and the data collection methods employed. The first four sources listed provided both quantitative and qualitative data on the evaluation questions.

Exhibit 1.4 Key study questions and data used in each study

Evaluation study			Key study questions/Nature of data collected		
	Data sources	Data collection methods	What are ISNAR's achievements?	What are ISNAR's impacts?	What are ISNAR's constraints?
Survey of agriculture leaders	66 NARS leaders	Questionnaire, telephone interviews	Data on ISNAR's input into 10 areas of management	Data relating to 10 areas of management	Data on constraints both external and internal to ISNAR
Survey of ISNAR stakeholders	24 ISNAR stakeholders	Questionnaire, telephone interviews	Data on perceived sources and quality of ISNAR's achievements	Data on perceived sources and quality of impacts	Data on constraints both external and internal to ISNAR
Country case studies	Key informants in Kenya, Morocco, and Uruguay	Case studies based on face-to-face interviews during visits to 3 countries	Data on activities, processes, and procedures used by ISNAR to achieve results with NAROs	Data on impacts observed in NAROs	Data on constraints ISNAR encounters in working with NAROs
Meta-Evaluation of ISNAR reviews	17 ISNAR review reports	Content analyses focusing on utility and quality criteria			Data on potential for reviews as learning tool
Inventory of ISNAR's outputs	ISNAR records on activities and outputs	Use of ISNAR database	Quantitative data on ISNAR's outputs: documents and training events, 1991–96		

Key terms and concepts for assessing ISNAR performance

ISNAR carries out activities to produce outputs in the form of products (e.g. publications) and services (e.g. training and advisory missions). In this study, we use the terms "outputs" and "achievements" as synonyms. ISNAR produces its outputs in order to effect changes in the environment in which NAROs operate, and in their internal motivation and capacity. These changes, in turn, are expected to lead to improvements in organizational performance, effectiveness, efficiency, and relevance. In this study the term "ISNAR impacts" refers to these desired changes in NAROs and NARS.

ISNAR has little or no control over the actual use of its outputs or over institutional changes; these are the responsibility of the NAROs themselves. This study finds that it is not so much the volume of ISNAR's outputs that predicts impacts on NAROs, but the nature of the collaboration, the quality of the outputs, and how they are used.

The extent to which ISNAR produces outputs which are usable and beneficial to a NARO, is affected by *constraints*. Constraints refer to factors which limit ISNAR's achievements or its impacts on NARS. Constraints may be internal or external to ISNAR, as well as to NARS and individual NAROs.

ISNAR staff respond to requests from NAROs through advisory, research, and training activities designed to address specific concerns of and issues faced by policymakers and research managers. The range of these concerns and issues is vast and includes, among others, the formulation of policies and strategies; priority setting; management, monitoring, and evaluation of research programs; improving management of human and other resources; and forging links with research organizations, technology users, and stakeholders**.**

Over the years, ISNAR has used different groupings of policy and management factors to describe its work. For the purposes of the present study, ISNAR activities and outputs were classified for analytical purposes into 10 groups, which we refer to as 10 **agricultural research policy and management areas**:

1. formulation and implementation of agricultural research policy
2. strategic and long-term planning
3. organizational structure and governance mechanisms
4. management of research programs
5. management information systems
6. management and dissemination of information
7. human resource management
8. financial management and accountability
9. international and local linkages and networks
10. organizational culture, staff commitment, and loyalty

These 10 categories, arrived at jointly by the study team and a group of ISNAR professionals, were also used to guide interviews with agricultural leaders about ISNAR's achievements, impacts, and constraints.

Limitations of the study

NARS tend to be composed of loosely related organizations and institutions. The informal configuration of most NARS limits ISNAR's work with them as systems, therefore ISNAR engages principally in activities with individual NAROs. This study, therefore, was directed toward NAROs rather than NARS per se.

Case study authors made use of the same conceptual framework and approach, but wrote their studies in different formats, reducing their direct comparability.

The response rate to the two telephone surveys was somewhat lower than anticipated (66% for NARS leaders; 80% for stakeholders), due mainly to somewhat outdated telephone or fax numbers, and difficulties encountered in contacting busy people in large institutions. This resulted in the final sample of 66 NARS leaders and 24 stakeholders.

Time is an ever-present constraint in evaluation studies and the time frames constraining the present study were *particularly* tight. This entire study was planned and executed during the period June 10–November 15, 1996.

Existing ISNAR databases did not contain information on ISNAR outputs (documents, training events, and other data) in a form suitable for this evaluation study, necessitating work on the part of ISNAR staff. The resulting inventory of ISNAR outputs was less complete for training than for documents.

Given the wide range of purposefully chosen, complementary, and overlapping methods used to gather information for this study, none of the constraints posed unduly serious threats to the quality or quantity of the data collected.

The study team

This study was carried out by a team composed of five individuals. Two of the members (Debela and Borges) had firsthand knowledge of NARS and NAROs prior to the study. Debela is a highly experienced agricultural research manager who, like Borges, is familiar with ISNAR's work and has extensive evaluation experience. The other three members are professional evaluators. All team members participated in a planning workshop for the study in The Hague (June) and in preparation of the final report in Montreal (October, November). Specific contributions and foci of attention are shown in Exhibit 1.5.

Exhibit 1.5 Study team members

Team member	Major contribution	Primary focus
Ronald Mackay	Evaluation	Team leader; Morocco case study; final report
Seme Debela	Agricultural research management, evaluation	Kenya case study; final report
Terry Smutylo	Evaluation	Meta-Evaluation of ISNAR reviews, surveys of NARS leaders and stakeholders
Jairo Borges	Organizational psychology, evaluation	Uruguay case study, survey of NARS leaders
Charles Lusthaus	Institutional assessment, organizational development, evaluation	Institutional assessment framework, meta-evaluation of ISNAR reviews

Organization of the summary report

This summary report comprises five sections that reflect the main evaluation questions. Section 2 reports on ISNAR's achievements as reflected in the inventory of outputs, prepared by ISNAR and supported by the data obtained by the evaluation team. Section 3 reviews ISNAR's impacts on the policy and management of NAROs, and stakeholder perceptions of the quality of these impacts. Section 4 examines the external and institutional constraints faced by ISNAR in conducting its work. Section 5 presents lessons learned and the conclusions of the study.

Observations on this report and on the evaluation studies

It is inevitable that ISNAR's stakeholders, including ISNAR staff, will have a range of different views of and experiences with the organization. ISNAR's view of itself as an organization is more complex than that which is held by many of its stakeholders and partners. ISNAR sees itself as being organized into two programs engaged in three types of service to partners, i.e. a management program and a policy and system program; engaged in 1) comprehensive institutional development, 2) support for specific policy and management components of NARS, and 3) generation and dissemination of knowledge and information in the form of public goods. ISNAR sees itself as providing these services through result of research, training, and advisory services.

ISNAR's partners and stakeholders, however, tend to view ISNAR as a unitary organization. They see some of the organization's professional staff engaged in extensive fieldwork, and the personalities and skills of this group are well known to them. They consider the rest of the staff as being engaged in unseen and largely unknown activities at headquarters in The Hague.

At the same time, the evaluation team is aware of a consensual, superordinate view of ISNAR held by these same partners and stakeholders. The widely held view is that ISNAR is an effective organization with a difficult mandate which raises an overwhelming set of expectations internationally. ISNAR possesses a strong professional staff provided with sound support and infrastructure, who make it possible to meet many of these expectations with quality service and achievements that result in positive impacts on the capacity and performance of NARS.

Given its relatively small size, restricted resources, and strong motivation to carry out its mission, ISNAR is constantly under pressure to respond to new and novel requests in an ever-changing arena, even when the effort to do so stretches the capacity of its staff and the boundaries of its strategic plan. ISNAR enjoys a good reputation for the international work it carries out.

In this chapter, the findings of the evaluation team are highlighted. This is to alert the reader to affirmations based directly on the data obtained from the multiple sources, which informed the individual studies and about which, therefore, the authors feel confident.

"ISNAR fills what used to be a gap in the CGIAR support system."
Stakeholder

2. Achievements

ISNAR's achievements are viewed by NARS leaders and stakeholders as including both accomplishments in the environment of NARS, and the successful completion of specific tasks and activities to strengthen individual NAROs. Partners and stakeholders tend to see these achievements in terms of the organization as a whole rather than in terms of ISNAR's separate programs.

Broad-based achievements in the NARS environment

Finding #1: *ISNAR has demonstrable achievements in the national and international environments within which agricultural research is funded and carried out. In particular, ISNAR has successfully provided opportunities for enhanced communication and understanding between NAROs and other key stakeholders including governments, donors, and CGIAR centers. These are valued accomplishments in line with ISNAR's mandate.*

Stakeholders and partners commend ISNAR in its role as an advocate for NARS and a liaison between NARS and international agencies and donors. The quality of its achievements in the period under review is valued. NARS leaders and stakeholders identify the following types of achievement:

- liaison between CGIAR and NARS; among NARS of different countries

- ensuring that NARS' situation and needs are on the CGIAR agenda
- raising international awareness for needs and context of NARS
- playing an advocacy role for NARS in the international community
- playing an intermediary role between NARS and research organizations in developed countries
- providing access to global data and knowledge
- offering opportunities for international comparisons between NARS
- creating platforms for international dialogue on key issues of agricultural research

"A principal achievement of ISNAR is maintaining public attention on national research programs and associated policy issues."
Stakeholder

Capacity-building achievements

Finding #2: *ISNAR has valued achievements in key agricultural research policy and management areas where NAROs demonstrate the need and desire for organizational strengthening.*

Much of ISNAR's effort is directed at specific, client-oriented issues related to improving particular management functions and the use of improved management tools. The precise nature of ISNAR's client-oriented activities is generally arrived at jointly with partners on the basis of a request and, frequently, a review of the institutional context and organizational strengths and weaknesses of the NARS in question. Stakeholders and partners gave high marks to ISNAR's capacity-building achievements, commending the relevance, usefulness, or ready availability of training, as well as methods and support for priority setting, program planning, and master and strategic planning.

Stakeholders and partners mentioned the value of ISNAR's publications and its timely participation in issues of growing international concern, including biotechnology, natural resource management, ecosystems, private sector collaboration, and enhanced collaboration between NAROs, universities, and the private sector.

NARS leaders cited the value of ISNAR's achievements in all 10 management areas included in the interview survey (Exhibit 1.6). As these do not cover all of the areas in which ISNAR works with NAROs, Exhibit 1.6 only partially represents ISNAR's achievements.

ISNAR's partners tend to view its achievements not as individual, discrete activities related to research policy or management, but as contributions to their organization as a whole.

For NAROs, collaboration with staff from one of ISNAR's two programs (the Policy and System Development Program or the Management Program) leads to achievements and results in other closely related areas. Thus, collaboration in strategic planning, to take one example, is seen by NARS leaders as not only impacting the area of "strategic and long-term planning" but also the "management of research programs" and "organizational culture and staff commitment and loyalty." ISNAR's structure, composed of two separate programs, may be an administrative convenience, but is not significant to its partners as long as quality advisory, research, and training services are delivered by competent professionals with the requisite cultural and interpersonal skills.

Exhibit 1.6 Frequency with which agricultural leaders cited contributions in 10 policy and management areas, and the most frequently cited specific contributions in each area

Policy and management areas	No. of times cited	Most frequently cited specific contributions	No. of times cited
1. Formulation and implementation of agricultural research policy	86	Research planning Research priority setting	20 16
2 .Strategic and long-term planning	47	Strategic planning Research priority setting	17 9
3. Organizational structure and governance mechanisms	22	Organizational restructuring Definition of roles, responsibilities, and policies	6 5
4. Management of research programs	31	Research planning Strategic planning methods	7 5
5. Management information systems	46	Implementing INFORM Publications and written reports	25 10
6. Management and dissemination of information	37	Publications Sending and updating information	18 9
7. Human resource management	37	Personnel training in the area Human resources development plan	18 13
8. Financial management and accountability	13	Strengthening financial management Consulting in financial management	11 2
9. International and local linkages and networks	33	Establishing links with similar institutions and producers Establishing regional networks	22 6
10. Organizational culture, staff commitment, and loyalty	32	Providing better regulation for the organization Strategic planning	10 8

Source: Survey of agricultural leaders

Achievements in these and other management areas are also reflected in the inventory of ISNAR outputs (Exhibit 1.10) and corroborated by our analysis of ISNAR's activities in Kenya, Morocco, and Uruguay (Chapters 5–7).

Dissemination of knowledge and information

ISNAR disseminates knowledge and information about national agricultural research for use by all developing countries, as well as for the international development community and other interested parties. Stakeholders mentioned the importance of these "public goods," citing, for example, *Science under Scarcity* (Alston, Norton, Pardey 1995). Other public goods represent timely, high-quality contributions in areas of increasing importance, e.g. *Monitoring and Evaluating Agricultural Research: A Sourcebook* (Horton et al. 1993, 1994). Some publications have been produced jointly with partners, such as the *Guide d'élaboration de programmes et d'établissement de priorités* with the Insititut National de la Recherche Agronomique (INRA), Morocco (Collion and Kissi 1994, 1995), and the set of training materials on research planning, monitoring, and evaluation produced in Latin America. Some publications are available in more than one language.

One case study informant commented on what appeared to him as the excessive length of many ISNAR publications. Talking as a senior research manager, he expressed the opinion that publications of around 10 pages maximize the likelihood of their being read. In fact,

ISNAR produces a series of 'Briefing Papers' of under 10 pages each, but these may not be as widely known, or distributed, as they deserve to be.

Finding #3: *ISNAR has produced more than 1,000 documents in the period 1991–1996. However, fewer than 100 articles were published in professional journals. Moreover, ISNAR does not communicate effectively to its stakeholders what it does and how it does it*.

In its output inventory ISNAR classified its publications in a way that made sense internally (Exhibit 1.7). However, partners and stakeholders interviewed were unfamiliar with this classification. Moreover, more in-depth scrutiny indicates that ISNAR's inventory of publications and documents includes a broad array of country reports, books, journal articles, management guidelines, conference reports, newsletters, discussion papers, and special-project documents of varying substance and quality.

Research reports, advisory service documents, and training materials account for most (85%) of the documents produced by ISNAR in the five-year period under review. ISNAR's research function produced the lion's share of documents. Nevertheless, during the review period, ISNAR staff members published fewer than 100 articles in professional journals. Since 1993, the number of external publications, and of journal articles in particular, have declined. In 1996, ISNAR staff, numbering almost 40 professionals, published only four peer-reviewed articles.

These figures, if indeed they represent a trend, may suggest that ISNAR lacks a clear set of values and priorities to focus and direct the documentary output of its staff. On the one hand, insufficient evidence of peer-reviewed, quality research could have negative consequences on the reputation and performance of an organization that presents itself as specializing in management research and development, and as offering a research-based service to its clients. On the other hand, it may demonstrate that priority is being given to a broader readership which possesses less interest in ISNAR's research and more in its application. ISNAR might do well to clarify its policy regarding the particular segments of its overall partner groups it wishes to address through documentation, and with what level of effort and intensity.

Stakeholder and case study interviewees reported only a medium level of awareness of specific publications, with considerable variation. Of those familiar with them, many would like to see an improved balance between research and practice, with the balance shifting toward practice informed, by research and careful consideration for the readers. A few reported a decline in the conceptual (research) basis for ISNAR's work. This suggests a need for ISNAR to be more clear internally and in the way it presents itself to others, regarding the balance between research and service.

> *"One ISNAR publication I remember in particular consisted largely of table headings but with very little or, in many cases, no data at all. What does the author, or ISNAR, think we can do with that?"*
> Case study informant

> *"There needs to be a creative tension between research and action or the advisory services which feed into the information function. This synergy of research, advisory [services], and information needs to be articulated in ISNAR's vision."*
> Stakeholder

Exhibit 1.7 Types of ISNAR reports and publications produced, 1991–1996

Type of report	No. produced
Research	683
Advisory service	145
Training	76
Public awareness	23
Internal mngmt. & accountability	44
Multiple purpose	91
Total	1062

Source: ISNAR output inventory, 1991–1996

With regard to quality of publications, one stakeholder commented that some publications develop an "ISNAR speak" which can get in the way of effective communication, given that French and English are second languages for many of the target readers. It is, however, important that ISNAR develop a consistent institutional "voice" or perspective on its work, and consistency in its use of concepts. Over the years, a number of efforts have been made to define consistent vocabularies in fields such as programming, monitoring, evaluation, and information management, but they may not have been well diffused.

The small number of documents in the public awareness category (Exhibit 1.7) may help to explain a finding in the stakeholder survey: "While ISNAR is well known, it may not communicate well what it does and how it does it."

Approximately half of ISNAR documents are aimed at a global audience, 37% are country-specific, and 13% are region-specific. This distribution between global-, regional-, and country-specific relevance is in harmony with ISNAR's concern for maximum "spillover" and breadth of use to be gained from its service activities (Exhibit 1.8).

Exhibit 1.8 Geographical focus of ISNAR documents

Geographical focus	No. produced
Global	527
Regional	139
Country-specific	396
Total	1062

Source: ISNAR output inventory 1991–1996

The distribution of regional- and country-specific documents is broadly in keeping with ISNAR's stated priorities, with some over-representation in Sub-Saharan Africa, and some under-representation in the regions of Asia and the Pacific, and West Asia and North Africa (Exhibit 1.9). Training statistics reveal a similar regional pattern (Exhibit 1.11).

A summary of ISNAR reports and training reveals that in the policy realm of the 10 working areas (areas 1 and 2) most outputs have been in the form of publications and little training has been done. In contrast, in the management realm (particularly areas 4, 5, and 6) training has received relatively more attention (Exhibit 1.10).

Achievements in training

ISNAR training, in this study, refers to activities for which the principal objective is to improve the capacity of professionals. Other ISNAR activities, which have the development of a product (e.g. an agricultural research policy or plan) as their primary goal, but which may also result in the improved capacity of those participating (more or less as a by-product) are not included in this definition of training.

To what extent is ISNAR training driven by demands from NARS? Is it a planned phase in specific projects or the result of the serendipitous availability of training funds? The answer is not clear, but ISNAR training appears to be driven by a fortuitous combination of all of these factors. Irrespective of how training strategies are determined, ISNAR's clients most

frequently cite training as the product or service that ISNAR has contributed toward strengthening their organization (Exhibit 1.13).

Finding #4: *In the review period, ISNAR delivered over 100 management training events internationally, reaching over 2,500 agricultural research managers. ISNAR's training is highly valued and seen as relevant. All but one of these 116 recorded training events were in the management area.*

Exhibit 1.9 Regional focus of documents vs. ISNAR's planned resource allocation

Region	No. of countries in region	Documents produced		Planned resource allocation* %
		Number	%	
Sub-Saharan Africa	38	266	52	40
Asia & the Pacific	17	103	20	30
Latin America and the Caribbean (LAC)	22	120	23	20
West Asia and North Africa (WANA)	9	23	5	10
Total	86	512	100	100

Source: ISNAR output inventory, 1991–1996.
*As stated in 1991 ISNAR strategy

Exhibit 1.10 ISNAR outputs in ten policy and management areas

Management area	Reports		Training	
	No.	%	Events	Partic.
1. Formulation and implementation of agricultural research policy	260	31	1	17
2. Strategic and long-term planning	102	12	4	127
3. Organizational structure and governance mechs.	30	4	2	44
4. Management of research programs	120	14	25	628
5. Management information systems	54	7	45	832
6. Management and dissemination of information	58	7	14	245
7. Human resource management	80	10	8	440
8. Financial management and accountability	3	0	4	25
9. International and local linkages and networks	122	15	13	240
10. Organizational culture, staff commitment, and loyalty	0	0	0	0
Total	829	100	116	2598

Source: ISNAR output inventory, 1991-96.

Stakeholders view training as being highly relevant and appreciated. Case study interviewees corroborated this view, adding that they highly value the participatory processes employed in ISNAR's training events.

Exhibit 1.11 Training events and participants by regions

Region	Events	Participants
Sub-Saharan	71	1426
Asia	18	218
LAC*	9	290
WANA**	13	190
Devpd. Countries	9	116
Total	120	2240

Source: ISNAR output inventory, 1991-1996.
*LAC: Latin American and the Caribbean
**WANA: West Asia and North Africa

Details of training events, including immediate and follow-up evaluation, appear to be lacking in many cases. In this regard, ISNAR may be missing an opportunity to learn cumulatively about the organization, delivery, and impacts of one of its most important activities and, also, about how to improve it.

Advisory services and their outputs

Advisory service missions produce effects which are considered important but which are less readily recorded than publications and training events. In the period under review, ISNAR staff undertook several hundred advisory missions, produced country documents, and organized workshops and training in fulfillment of ISNAR's service mission. However, there are no systematic records on service activities, nor their outputs and impacts. Hence, a substantial effort had to be made by ISNAR staff to provide the study team with information on advisory work.

This state of affairs would suggest that ISNAR has no clear and common understanding as to what precise aspects of its performance it values sufficiently to measure. Neither is it clear how the results of what ISNAR does measure are to be interpreted and used, in order to assist the organization in moving more assertively and effectively toward its stated mission.

Finding #5: *ISNAR does not have a sufficiently well-conceptualized database system to permit the recording, measurement, and analysis of its efforts and, in particular, of its advisory service activities and outputs. This omission represents a striking deficiency in an organization specializing in the promotion of good management.*

Many advisory service outputs were documented in qualitative terms in the two surveys and the case studies, and we feel it is important that they be mentioned. Most stakeholders see ISNAR's service role as indispensable until its tasks are overtaken by other agencies and by strengthened NARS.

"If ISNAR did not exist, another institution would have to fulfill its role or ISNAR would have to be created."
Stakeholder

Over 70% of stakeholders interviewed reported that ISNAR helped their institution fulfill its mandate. About, one-third rated the benefits of ISNAR's work to their institution as high or medium-high. Half rated the outputs from ISNAR's in-country projects as somewhat useful and another quarter rated them as very useful.

NARS leaders rate ISNAR's overall impact on the performance of their organization as positive and rate the quality of ISNAR's contributions as somewhat better than those of other institutions.

Program-related achievements

Clients, partners, and stakeholders tend to view ISNAR's achievements as representing those of ISNAR as a whole, not as those of one or the other of its two programs. In managing its mandate through its programs and support units, ISNAR uses flexible coordinating mechanisms so that either program can draw upon skills from all parts of the institute. There is cross-program activity in most of ISNAR's advisory service work, in much of its training, and in some of its research. Since cross-program activities were undertaken throughout the period under review and ISNAR's partners view the institution as a whole (not as separate programs), no attempt will be made here to assess the achievements of each program separately.

Finding #6: *ISNAR's programs and cross-program activity have produced valuable advisory, research, and training outputs in the period under review. While the quality of many of these outputs is considered to be high, it is not uniformly so.*

Advisory work often involves cross-program cooperation. Outputs of diagnostic work often appear early in the collaboration between ISNAR and NAROs, and serve as inputs to the formulation (or reformulation) of national agricultural research policies, the restructuring of NAROs, or the planning of NARO activities and resources.

The three case studies (Kenya, Morocco, and Uruguay) illustrate achievements in policy formulation and long-term planning. In two of the three cases, collaboration took place prior to the period under review. Diagnostic review and planning exercises were aimed at long-term solutions and change. Institutional change processes are seldom instantaneous but may develop over 5–10 years, or even longer.

> *"ISNAR needs to do more on the management of organizational change and organizational development techniques. They have done lots on economic techniques and some on management, such as INFORM, or on human resources, personnel, and accounting. Manuals and training courses are good, but understanding how institutions or research organizations can change from their original to the desired state requires more. It's one thing to describe the desired state, but you also need tools for how to bring about change."*
>
> Stakeholder

In Kenya and Uruguay, ISNAR offered recommendations for the reorganization and strengthening of the research systems, based on diagnostic studies. In Morocco, ISNAR's task was to review INRA's Master Plan for Agricultural Research. In all three cases, studies were undertaken and documents presented to national governments or, in the case of Morocco, to INRA for their consideration. Action was taken in all three cases. The ongoing use of the recommendations represents the impacts of review and planning exercises conducted prior to the EPMR review period. This early diagnostic and planning work has had continuing, long-term benefits for the NARS in question.

During the review period, only one training event was associated with the "formulation and implementation of agricultural research policy" and only four events were associated with "strategic and long-term planning" (Exhibit 1.10). However, several seminars, conferences, and symposia were held to exchange information in these areas.

Certain activities are more immediately focused on raising the capacity of research managers. The number of documents related to management-oriented activities, the number of training

events, and the number of participants appear in Exhibit 1.10. The three country case studies also show that there has been a variety of achievements in the management-strengthening areas (Exhibit 1.12).

Exhibit 1.12 ISNAR management-related achievements observed in case studies
(alphabetical list)*

Creation of program budgeting systems	Impact of technology characteristics on adoption linkages between researchers and users
Design of transparent participatory procedures for priority setting	Management of research programs
Development of a decision-support model for priority setting	Monitoring and evaluation
Farmer involvement in setting research priorities	Priority setting
Financial management	Program planning
Human resource management	Promotion of university linkages
Identification of agricultural research priorities	Specifications for accounting software
Identification of user demand for technology	Specifications of technical requirements for micro-computer acquisition
Human resource development and training	Study of the coordination of NARS

Source: Country case studies
* There may be some overlap among the achievements listed here.

In the survey we carried out, agricultural leaders referred most frequently to achievements related to: (a) formulation of policy; (b) strategic planning; and (c) management information systems (see again Exhibit 1.6).

In response to a question asking them to identify specific products and services that ISNAR has provided to their organizations, agricultural leaders cited training and human resource development most frequently (Exhibit 1.13).

Exhibit 1.13 ISNAR outputs most frequently cited by agricultural leaders, as contributing to the strength of their organization or system

Outputs	No. of citations
Training, workshops, HRD*	66
Reports & publications	25
Strategic planning	21
Consultation & advisory services	17
Monitoring and evaluation	15
Institutional development in general	10
Policy formulation	5

Source: Survey of NARS leaders.
*HRD: human resource development.

The responses in the list represent categories generated by individual respondents based on their own perspectives, and not from the perspective of how ISNAR organizes itself or views its contributions. The responses are unlikely to be mutually exclusive. Once more, this reinforces the notion that ISNAR's achievements, viewed from the vantage point of its partners and stakeholders, may not entirely coincide with its own perspective on what it delivers and how.

3. Impacts

There is a long and complex series of causal linkages, involving many different actors and a multiplicity of inputs, between ISNAR activities at one extreme and NARS performance at the other. Between the two extremes there is a dynamic chain of achievement–impact

relationships, for which reliability and predictability diminish with each successive link beyond the ISNAR intervention. In evaluating ISNAR's impacts it is prudent, therefore, to focus on the primary impacts, i.e. the outcomes and results as identified, observed, or reported in the surveys and case studies.

In this report, the effects of ISNAR's research-based services are seen as its impacts on the three dimensions of NAROs—their organizational environment, motivation, and capacity—which together contribute to their performance (Lusthaus, Anderson, and Murphy 1995). They are not viewed as changes in "economic surplus," a perspective proposed by Alston, Norton, and Pardey (1995, 503). Our approach explicitly recognizes and values ISNAR's critical research-based role as one aimed at strengthening institutions and understanding how their management is improved in successful development. Alston, Norton, and Pardey consider research aimed at modifying or strengthening institutions as a factor that complicates the measurement of research benefits in economic terms (op. cit., 503).

The distinction being made here highlights a significant difference between two competing views as to what constitutes the "appropriate levels of analysis in public-sector management oriented to development" (Esman 1991, 15). The appropriate level for many economists, according to Esman, is the "macro-management of the national economy," focusing on economic policy frameworks and specific policy instruments by which "economic incentives are believed to be enhanced and economic behavior is regulated and disciplined" (op. cit., 16). The appropriate level for those with management interests and responsibilities, however, is more likely to focus on the "rules and practices by which government-sponsored programs are designed, implemented and evaluated" (op. cit., 16), and the more concrete activities involved in the management of individual institutions, research centers, and experimental farms.

By necessity, ISNAR must address challenges at the more concrete levels of organizational management, if significant performance improvement is to be realized within the NARS. The largely unaddressed and therefore unresolved competition between the perceived appropriate levels of organizational analyses and intervention for ISNAR may be one key to explaining the discrepancy between the large amount of management training offered by ISNAR and the dearth of training delivered in the policy area.

Presented below are the findings on ISNAR's impacts on the external environment, followed by its impacts on the management and organization of NARS.

Impacts on the external environment of NARS

ISNAR impacts are principally on NAROs, as opposed to NARS *per se*. The reason has already been mentioned, viz. that NARS are usually relatively loose-knit networks of organizations. There are exceptions, however, as the following statement reveals:

> *"ISNAR has had a major influence on NARS. It has influenced a few NARS and several NARIs on organization and management. It influenced some on methodologies, planning, monitoring, and evaluation, and information systems. In a few cases, in terms of changing the institutional model, like Costa Rica, they were very successful. . . . In other cases, no. This can be very peculiar to the country, not to the international partner."*
>
> Stakeholder

This statement attributes the difference in approach, i.e. whether the NARS or the NARO is the target of activity, largely to the individual context in a given country.

Finding #7: *ISNAR has successfully produced results within the external environments of NARS by promoting and encouraging a climate of awareness, understanding, and productive communication between NARS and superordinate national and regional bodies to whom agricultural research organizations must be accountable.*

Much of the evidence of ISNAR impacts on NARS' external environments is provided by the country case studies, which are drawn upon heavily in this section.

ISNAR impacts on the external environments of NARS have come largely through the implementation of review recommendations, and from policy formulation and planning activities. According to stakeholders, ISNAR has also had national and regional impacts by facilitating a policy dialogue on agricultural research policy and management, by providing safeguards against local factional dissension, and by encouraging governments to place higher priority on agricultural research. As a result, evidence from the country case studies shows that some NAROs now enjoy:

- improved policies/laws, resulting in enhanced status for the organization (KARI, Kenya, and INIA, Uruguay)
- increased credibility in the eyes of government, resulting in enhanced funding (KARI's government-allocated budget increased by over 50% between 1986 and 1992)
- access to high-level policymakers in government (INIA and KARI)
- access to international and regional donors, funds, and other support (INRA and KARI)

Some of the stakeholders interviewed report that, as a result of ISNAR activities in institution building, NAROs now have better policy and planning capacities, can better express their needs and demands, are more realistic and able negotiating partners, and are easier to cooperate with and provide support to.

Evidence of ISNAR's impact on the external environment of NAROs is also presented by the NARS survey results. Asked to rate ISNAR's impact in the 10 management areas, respondents gave the highest ratings to "policy formulation" and "strategic planning," both of which have been found to positively impact the external environment.

Impacts internal to NARS

ISNAR has initiated and participated in many collaborative activities to promote the development of features essential to effective and efficient NARS. These include: defining national research policies and objectives; priority setting; mobilizing required resources; organizing and coordinating multiple partners; designing and managing multiple-partner research projects to meet agreed upon objectives; ensuring that results reach the intended beneficiaries; and monitoring and evaluating research outputs and impacts.

Questions are sometimes asked regarding the impacts of ISNAR on producers. The position taken by the authors of this study is that producers are the clients and partners of NAROs and other entities responsible for agricultural research in a given country; seeking and reporting impacts on producers, therefore, is regarded as the domain of the country, not of ISNAR. It is beyond the scope of this study to attempt to measure achievements in the chain beyond NAROs, although there is an implicit assumption that downstream impacts will affect the broader national goals of food security, poverty reduction, and environmental sustainability.

Finding #8: *ISNAR has impacted the internal management capacity of many NARS.*

The study results suggest that a greater proportion of ISNAR's efforts have gone into addressing management issues related to capacity rather than motivation issues. Institutional motivation involves complex issues of organizational culture, value systems, attitudes about work, and its incentive/rewards structure—matters that are closely bound up with the institution's history and the evolution of its mission. ISNAR's attempts to address the motivational dimension of INRA have demonstrated vividly the intricacies involved in entering this arena (see Chapter 6). ISNAR's successful experience with the relatively more concrete dimension of organizational capacity may, consciously or unconsciously, determine that efforts be directed less toward the motivational dimension of NAROs.

One case study informant, a senior research manager, alluded to what he viewed as the constrained focus of ISNAR's institution-building efforts. He observed that, in his experience, ISNAR tends to offer more tools and interventions at the policy and senior management levels of NAROs than at the level where these tools, if adopted, will require the greatest change effort—namely, the "researchers who do the work." This observation may help to throw some light on ISNAR's relatively greater impact on its clients' capacity as compared to their organizational motivation, and the problems it thereby leaves unaddressed.

Overview

Much of ISNAR'S impact is not easily quantifiable but has been mentioned by stakeholders and NARS leaders, and observed in the case studies. Impacts on the management and structure of the NAROs have been brought about largely by means of a combination of advisory services, research, and training in management and institution building. As a result, some NAROs now enjoy and demonstrate the following:

Increased clarity and relevance of institutional mission. The development of and adherence to the new mission statement of INIA is viewed by many of its researchers as having a positive influence on the organization's performance. Both KARI and INIA have streamlined their mandates and span of responsibilities.

Enhanced strategic leadership. Recommendations arising from initial diagnostic reviews and long-term strategic planning have contributed to changes in the legal status, governance, and organizational structures of institutions such as KARI and INIA, thus impacting their strategic leadership. Both organizations have become administratively autonomous, each with its own board of directors.

Increased skills in program planning and management, including monitoring and evaluation. Examples of the use and increasing institutionalization of research program planning and priority setting techniques were observed in KARI, INRA, and INIA. Results from the stakeholder survey indicate that the impact of ISNAR on research program planning and management in NARS has improved NARS as negotiating partners with stakeholders. INRA, instrumental in the joint preparation with ISNAR of a research planning approach (Collion and Kissi 1995), has already used and fine-tuned this technique successfully with most of its 18 research programs.

Increased skills in other areas. KARI participants in management training witnessed rapid impacts in some cases. For example, a series of workshops on scientific writing and presentations resulted in the improved quality of documents produced and in the volume of subsequent publications authored by KARI researchers.

Stakeholders report that ISNAR collaboration has contributed to improved client orientation and priority setting in some NAROs. Moreover, NAROs are able to communicate more

effectively with donors, making it easier for donors to cooperate with them and provide support.

New techniques and technologies to assist management. Many NAROs are using micro-computers and software to assist with research program management. The survey of NARS leaders, the stakeholder survey and the three case studies indicate that resources, management tools, and processes introduced by ISNAR are increasingly institutionalized by NAROs. As research managers become familiar with existing computerized management information systems (e.g. INFORM) the weaknesses of these generic systems become increasingly obvious and the need for locally relevant, tailor-made systems increases. Both INRA and INIA have taken steps to develop or request assistance with such systems. An excellent example of an indirect, downstream impact of ISNAR in this area is the publication of a manual on management information systems by the Indian National Academy of Agricultural Research Management (Balaguru, Manikandan, and Kalla 1996). This is more fully discussed below in the section dealing with international spillover.

Improved internal structures. In the cases of KARI, INRA, and INIA, new or modified organizational structures have improved internal communications and, also, helped to clarify the institutions' areas of responsibilities, mainly in regard to agroecology coverage and commodity/factor research.

Enhanced focus on agricultural research, with a clearly defined relationship between research and extension. ISNAR's (and others') insistence upon a clearly defined relationship between research and extension activities has had a positive impact in focusing INIA's mission, thus helping it to concentrate on research.

Enhanced internal training capacity. In Kenya, a small cadre of trained trainers has emerged, able to organize and execute their own training programs with minimal assistance from ISNAR.

Improved client orientation and priority setting. Stakeholders report that ISNAR collaboration has helped NAROs manage their research more efficiently and effectively, due to improved client orientation and priority setting.

Enhanced linkages with clients. ISNAR has impacted NARS' capacity in the important areas of improving linkages and coordinating with technology users. ISNAR's impacts in this respect have been achieved through research, training, and advice in client-oriented, on-farm research and research-technology transfer linkages. There has been some recent work on techniques such as participatory rural appraisal and farming systems research.

KARI is reported as being a changed institution in terms of its enhanced linkages with technology users. In Morocco, the new INRA research center at Meknes is collaborating with the extension service by publishing an information newsletter directed at producers following the ISNAR/GTZ/INRA project, which is designed to enhance farmer involvement in research planning.

Networking. Over the past five years, ISNAR has actively supported the establishment of regional associations of agricultural research institutions. The objectives of this effort are to enhance information exchange among research workers in the region, and to rationalize resource use through task sharing or specialization in specific areas of research and training.

Increased relevance and institutional sustainability. NAROs report to have improved their standing with clients, partners, and stakeholders.

Results from two of the case studies also indicate that NAROs are enjoying increasing government support, which could be associated with their meeting government expectations and providing increased client (farmer) satisfaction.

Overall assessment of impact

NARS leaders' perceptions of ISNAR contributions to their organizations are summarized in Exhibit 1.14. While, the figures presented are averages for the entire sample, it should be kept in mind that there is substantial variation among organizations and regions.

The overall impact of ISNAR in each of the ten areas is reported as being positive. Highest overall ratings are given by NARS leaders to the impact of strategic and long-term planning, linkages and coordination, and agricultural research policy formulation.

Greater insight into ISNAR's impacts, is obtained when NARS leaders who reported specific contributions from ISNAR in the key management areas are separated out from those who did not. Analyses confirm that they represent two statistically distinct groups (Chapter 4). Those who reported ISNAR contributions to their management practices in any of the 10 management areas can be identified as "adopters;" those who reported none, "non-adopters."

Exhibit 1.14 ISNAR impact on ten areas of NARS management

Management area in which innovations were offered by ISNAR	% adopters	Mean impact score*		No. of respondents (max. = 66)
		Adopters	All	
1. Formulation and implementation of agricultural research policy	66	1.4	1.0	61
2. Strategic and long-term planning	73	1.4	1.0	62
3. Organizational structure and governance mechs.	53	1.1	0.6	55
4. Management of research programs	66	1.3	0.9	58
5. Management information systems	58	1.2	0.7	55
6. Management and dissemination of information	53	1.1	0.6	54
7. Human resource management	76	1.1	0.8	59
8. Financial management and accountability	37	1.0	0.4	53
9. International and local linkages and networks	64	1.4	1.0	58
10. Organizational culture, staff commitment, and loyalty	33	1.2	0.5	53

Source: Survey of NARS leaders

***** The scale runs from -2 to +2. The maximum possible score = 2.00. "Adopters" refers to those who integrated an innovation into their management practices. "All" refers to mean score for all respondents.

The proportion of adopters—those who integrated the innovation into their management practices in one form or another—ranged from under 40% in the cases of "financial management and accountability" and "organizational culture, staff commitment, and loyalty" to over 70% in the cases of "human resource management" and "strategic and long-term planning." Adopters report ISNAR as having a positive impact on their organizations; non-adopters, not unexpectedly, report little or no impact.

NARS leaders report the *extent* of ISNAR impact as being somewhat less than that of other organizations that have contributed to strengthening their capacity, and the *quality* of ISNAR impact as being somewhat greater. This seems to imply that ISNAR is delivering focused quality rather than quantity. Given ISNAR's restricted resources, this is a logical strategy to have employed.

Adopters report the highest ISNAR impacts in the areas of strategic and long-term planning, policy formulation, linkages, and networks. When the impact scores are averaged across all respondents (considering both extent and quality of impact) the highest impacts were obtained in the same areas.

A few negative impacts are reported in the areas of "human resource management," "management and dissemination of information," and "management information systems." These may be areas in which adoption has far-reaching and sometimes unanticipated consequences which, until the mechanisms are mastered fully and complications are eliminated, may disrupt the previous, often comfortable, functioning of the organization before ultimate benefits are felt. An alternative explanation is that some adopters in these areas find incompatibilities with existing systems which may be imposed on their organizations by external forces and thus find themselves at an impasse, unable to proceed with the adoption of a practice for which they are already convinced of the advantages.

International spillover

ISNAR develops new and improved management tools and techniques through its research and collaboration with partners. These are made available as public goods (information and publications that are available to all). Examples of some impacts of tools and techniques from the period under review follow.

The approach to program planning and priority setting, published under both the ISNAR and INRA logo in 1994, is now in use in Benin, Burkina Faso, Mali, Senegal, and Peru, and has been introduced into Algeria.

Four agricultural research training modules in strategic management (Gálvez et al. 1995), planning (Borges-Andrade et al. 1995), monitoring (Bojanic et al. 1995), and evaluation (Granger et al. 1995) are being used throughout Latin American and the Caribbean by an expanding regional group of trainers. Interestingly, the first two of these modules were used spontaneously and without the intervention of ISNAR or the trainers in Cuba with enormous enthusiasm and success. Requests for these materials, which were produced in, by, and for Latin America and the Caribbean, have come from around the world.

Another particularly interesting impact of ISNAR's work is the publication of a manual on management information systems for agricultural research by the Indian National Academy of Agricultural Research Management (Balaguru, Manikandan, and Kalla 1996). Initially inspired by the ISNAR-developed system INFORM, the Indian system was conceived to meet the specific requirements of the Indian Council of Agricultural Research Institutes and the State Agricultural Universities of India in improving research productivity. This is a clear example of a "downstream," secondary impact which originated in an ISNAR activity.

Multipliers

In 1991, the second EPMR panel encouraged ISNAR to develop "multipliers" for its work. ISNAR has done so. Multipliers are persons whose valuable skills have emerged and possibly been enhanced during the course of collaboration with ISNAR.

ISNAR has published many training modules—public goods—that are being used by trainers in different organizations around the world. In Latin America and the Caribbean, ISNAR's work to strengthen planning, monitoring, and evaluation has produced a cadre of multipliers who undertake both training and advisory service work in the region. INRA, Morocco, provides an example of the emergence of individual multipliers who work in conjunction with ISNAR on projects in WANA and SSA in management, where they have developed pre-

eminent expertise. In Kenya, the training unit is now able to organize and execute its own training programs with minimal assistance from ISNAR.

4. Constraints Faced by ISNAR

ISNAR receives a high volume and wide variety of constantly changing requests from NARS displaying widely varying levels of capacity. ISNAR must cope and respond adequately to this flow of requests in order to accomplish its mandate. In doing so, ISNAR faces many constraints. Some are external and beyond ISNAR's control; others are institutional and can be overcome or minimized.

Constraints external to ISNAR

ISNAR's external constraints can be summarized as follows:

- rather loose configurations of most NARS
- limited core budget and staffing level
- relative difficulty of working in "soft" area of institutional capacity-building
- political situations and other exigencies sometimes result in actions being taken that run counter to the direction in which a NARO has been working in partnership with ISNAR, sometimes representing the loss of considerable investments of time and money
- limited collaboration with other CGIAR centers in strengthening NARS management
- relatively low international and national priority given to agricultural research

> ***Finding #9:*** *ISNAR's mandate determines that it carries out a difficult mission, viz. organizational strengthening, in an uncertain arena, i.e. national agricultural research systems. The component organizations comprising NARS sometimes exhibit relationships so loosely knit as to defy the minimum conditions necessary to constitute an integrated system.*

The very notion of organizational strengthening presents, in itself, a major challenge. In the decades of the 1960s and 1970s, as Esman (1991) has pointed out, there was a tendency to believe that successful approaches to organizational capacity building were well understood and could be applied with relative ease and appropriate modification, from country to country. However, by the early 1980s it came to be recognized that developmental organizational change was much more complex than the simple transfer of methods and models. Most stakeholders involved in institutional strengthening efforts have now acknowledged that change includes uncertainties and requires "familiarity with and respect for indigenous values and practices, adjustments sensitive to distinctive circumstances, and the importance of continuous learning as a strategy for improved management" (op. cit., 2–3; Lusthaus et al. 1996; Lusthaus, Anderson, and Murphy 1995; Cook et al. 1995; Montague 1997).

This means that ISNAR's challenge cannot be successfully addressed by applying mechanical "solutions" either at the macro-policy or micro-institutional levels. It also implies that ISNAR must work on all three organizational dimensions—external environment, motivation, and capacity—if significant institutional strengthening is to be achieved.

As was suggested in the section "Impacts internal to NARS," it would appear that, to date, ISNAR has made the least impact in the area of organizational motivation. Again, this is a difficult area involving the organization's work culture and value systems, as well as its incentive/reward structures, all of which may be tightly bound up with its historical development.

One explanation for this low impact on the motivational dimension of NARS may be that ISNAR finds it relatively easier and less problematic to deliver concrete tools and training for capacity building than to address complex matters related to culture—which are often inextricably connected to the somewhat intransigent issues of governance and entrenched value systems verging on "bureaucracy"—issues that contribute to (and can detract from) effective organizational motivation.

Finding #10: *ISNAR appears to have attended to the external environment and the capacity of NAROs at the expense of the motivation dimension of these organizations as a consequence of the relative difficulty of working in the latter area.*

A second constraint relates to the nature of the NARS as **systems**. The entities that carry out agricultural research in a country seldom perceive themselves as belonging to a system. ISNAR tends to work with one or a few of the principal public institutions, eschewing the challenge of addressing system problems.

ISNAR's achievements and impacts ultimately depend upon the willingness and motivation of governments and partner NARS. The limitations on ISNAR budget and institutional size represent an external constraint which curtails its capacity to meet demand more effectively. ISNAR budgetary constraints reflect, to some extent, the priorities of the CGIAR system and international donors. This resource limitation is both external because it is imposed upon ISNAR to an extent, and internal because it constrains ISNAR's ability to carry out more work.

Because ISNAR's services are generally provided free of charge, demand tends to exceed supply. One solution would be to have a more clearly formulated strategy that would permit ISNAR to make easier decisions about which requests it accedes to and which it refuses. The lack of such a strategy is an internal constraint.

> *"One last constraint that must be overcome is the decline in public support for agricultural research. Such decline is noted in both the North and South. The relative abundance of food supplies in industrialized countries, coupled with increased private sector funding of research in some sectors, is used to justify relative declines in funding for agricultural research . . . . The overall decline in support for agricultural research must be reversed if the food needs of the future are to be met."*
>
> (Nickel 1996, 5)

ISNAR has taken leadership in many collaborative CGIAR initiatives, including the Integrated Voice and Data Network (IVDN), joint Internet web pages, agroecological workshops, studies on CGIAR impact and gender issues, regional and national fora, etc. These have provided enhanced relationships among international agricultural research centers. But the extent to which these benefits have had subsequent impacts on NARS is not easy to identify at this point.

Constraints internal to ISNAR

ISNAR is faced with the difficult task of addressing the needs of NARS, which in many cases are elusive and ill-defined collections of loosely related entities from both the public and private sectors.

Finding #11: *ISNAR walks a delicate line between addressing NARS on the one hand and NAROs on the other. ISNAR's strategy does not offer precise operational criteria that are used to prioritize its goals and guide its decisions and responses to requests from NAROs.*

Based on its studies, the team has observed the following internal constraints:

- ISNAR's strategy does not serve as an effective operational guide for decision making.
- ISNAR is not wholly clear who its primary clients are: NARS or particular NAROs.
- ISNAR's potential for collaboration with other CGIAR centers and partners has not been fully tapped. For example, almost all CGIAR centers report engaging in capacity building, but there has been little or no coordination with ISNAR in this regard.
- ISNAR's limited budget and relatively small size present a constraint to which there is no simple solution, given that ISNAR services tend to be provided free of charge. The demand for free goods, especially if their impact is high (as ISNAR's are largely perceived to be), is bound to exceed the capacity of the institution to provide them.
- ISNAR needs a mechanism to help prioritize its response to requests from NARS—a clearer vision and well-defined strategic niche as well as increased synergy with other CGIAR centers.
- Although ISNAR's reputation for the quality of its technical services, including its publications, is reported as good by most stakeholders interviewed, many feel the quality is variable.
- Public understanding of ISNAR's role, approach, and mission is not optimal. Stakeholders seem to view ISNAR through different lenses depending upon the nature of their relationship with ISNAR.

> *"In general it was surprising to note how many Centers plan to be involved in aspects of research management and how few indicated that they plan to do so in collaboration with ISNAR."*
> (CGIAR TAC Secretariat 1996, 41)

Finding #12*: The lack of a clear theory of action that explicitly identifies the connections between its goals and objectives, and the actions and resources it employs to achieve these, limits ISNAR's performance as a learning organization.*

ISNAR, like other organizations, depends on continuous quality monitoring to maintain and further its effectiveness and efficiency. One of ISNAR's precepts is to employ successful management strategies which it recommends to its clients. But ISNAR's own learning system is not optimized. It does not always ensure opportunities to record and learn from its own achievements and activities.

ISNAR needs an explicit theory of action (Patton 1997) by means of which it can explain how its various projects bring about the desired results. A clear theory of action would help ISNAR provide more persuasive evidence of its performance and impacts to donors and other stakeholders.

ISNAR's "learning bank" could also usefully include an inventory of lessons learned and skills developed over time.

ISNAR has commissioned several external reviews (ICERs). These have been evaluated to determine the extent to which they provide ISNAR with an opportunity to learn—from independent experts—how well thing are being done and how they might be improved.

While evaluations are only one aspect of an organization's learning system, it strongly appears that that ISNAR is not fully tapping the potential for learning which these evaluations offer. Exhibit 1.15 indicates how ISNAR might improve its ICERs so as to enhance their utility as learning tools.

Exhibit 1.15 Suggestions for making ICERs more useful learning tools

1. **ISNAR should specify TORs for its reviews that:**
   - State clearly who requested the evaluation and who is the intended audience.
   - Specify clearly the purpose for which the report is required and how the information will be used.
   - State the principal issues or questions which the report must address.
   - Make prioritized recommendations directed at specific persons.
2. **ISNAR should ensure systematic treatment of data by requiring reviewers to**:
   - Identify the evaluation questions elaborated from the principle issues.
   - Specify the types of data used, the sources of that data, and the collection methods.
   - Describe how the data was analyzed and interpreted.

Given the limited number of professionals on ISNAR's staff, it is impossible to cover all of the areas of research management requested by NARS internationally with an equally advanced level of expertise. Professionals may develop and enhance their knowledge and skills on the job while working with their clients. ISNAR professionals have multiple duties in The Hague as well as overseas, resulting in inadequate working time to devote to their own professional development. In the fast-moving area of institutional change, ISNAR needs a policy to provide its staff with regular opportunities for professional development.

5. Conclusions

"ISNAR was given the most difficult task of the CGIAR: to strengthen NARS."
Stakeholder

ISNAR's mandate—to strengthen the NARS of developing countries—is a complex and difficult one. This conclusion is supported by each of the studies conducted by the EPMR team. The results of the studies complemented and supported one another and the findings drawn from them. While much of the data collected is of the "expert opinion" variety, representing the views of ISNAR's users, clients, and informed stakeholders, "there is no gainsaying the fact that public perceptions matter, especially when clear patterns emerge from analysis of experiences of large numbers of people" (Paul 1995, 157).

While most international agricultural research centers contribute to agricultural research in relation to commodities or factors, ISNAR's mandate is unique in that it focuses upon research organizations and research systems *per se*. That the management of NARS is an appropriate focus is without doubt. It has been pointed out that structural adjustment and macroeconomics policy reform by themselves cannot produce the major individual and organizational changes that are required if significant performance improvements are to be realized (Esman 1991; de Merode and Thomas 1994, cited in Grindle 1997). Building NARS' capacity in agricultural research management has been recently described by the World Bank as an "urgent task" (Purcell and Anderson 1997). Nickel (1996) offers an inventory of their current organizational and management weaknesses, and it has been pointed out that the constraints on NARS' performance are exerted as much by management weaknesses as by the lack of research technologies (Horton 1986).

ISNAR has an important role to play in strengthening the management of agricultural research internationally. ISNAR carries out its role with vigor, resulting in a high level of client satisfaction and significant impacts on NARS and their constituent organizations. ISNAR has earned a good reputation for itself in the process.

"The NARS, and these projects (for improving organizational structure and research management) have benefited greatly by the work of ISNAR."
(Nickel 1996, 86)

Findings

The 12 findings noted in the body of this synthesis report are grouped together here, followed by the lessons learned about ISNAR's strengths, weaknesses, and areas requiring attention:

1. ISNAR has demonstrable achievements in the national and international environments within which agricultural research is funded and carried out. In particular, ISNAR has successfully provided opportunities for enhanced communication and understanding between NAROs and other key stakeholders including governments, donors, and CGIAR centers. These are valued accomplishments in line with ISNAR's mandate.
2. ISNAR has valued achievements in key agricultural research policy and management areas where NAROs demonstrate the need and desire for organizational strengthening.

3. ISNAR has produced more than 1,000 documents in the period 1991–1996. However, fewer than 100 articles were published in professional journals. Moreover, ISNAR does not communicate effectively to its stakeholders what it does and how it does it.
4. In the review period, ISNAR delivered over 100 management training events internationally, reaching over 2,500 agricultural research managers. ISNAR's training is highly valued and seen as relevant. All but a single one of these 116 recorded training events were in the management area.
5. ISNAR does not have a sufficiently well-conceptualized database system to permit the recording, measurement, and analysis of its efforts and, in particular, of its advisory service activities and outputs. This omission represents a striking deficiency in an organization specializing in the promotion of good management.
6. ISNAR's programs and cross-program activity have produced valuable advisory, research, and training outputs in the period under review. While the quality of many of these outputs is considered to be high, it is not uniformly so.
7. ISNAR has successfully produced results within the external environments of NARS by promoting and encouraging a climate of awareness, understanding, and productive communication between NARS and superordinate national and regional bodies to whom agricultural research organizations must be accountable.
8. ISNAR has impacted the internal management capacity of many NARS.
9. ISNAR's mandate determines that it carries out a difficult mission, viz. organizational strengthening, in an uncertain arena, i.e. national agricultural research systems. The component organizations comprising NARS sometimes exhibit relationships so loosely knit as to defy the minimum conditions necessary to constitute an integrated system.
10. ISNAR appears to have attended to the external environment and the capacity of NAROs at the expense of the motivation dimension of these organizations as a consequence of the relative difficulty of working in the latter area.
11. ISNAR walks a delicate line between addressing NARS on the one hand and NAROs on the other. ISNAR's strategy does not offer precise operational criteria that are used to prioritize its goals and guide its decisions and responses to requests from NAROs.
12. The lack of a clear theory of action that explicitly identifies the connections between its goals and objectives, and the actions and resources it employs to achieve these, limits ISNAR's performance as a learning organization.

Lessons learned

The lessons that follow are grounded in the findings of the studies undertaken as components of this research. They represent general hypotheses about ISNAR, about how it operates and is viewed by its clients. The authors believe these lessons can make a contribution to ISNAR as an organization as it strives to improve its performance and intensify its impact.

Client relations

ISNAR has developed processes and ways of proceeding with NARS that are culturally and contextually sensitive. This is a feature appreciated by its partners. ISNAR's approach is to respond to expressions of interest from NAROs, through non-directive activities which utilize and build upon NAROs' internal resources and encourage participant innovation and adaptation. This approach generally satisfies ISNAR's partners and maximizes the chances of institutionalization and sustainability.

ISNAR shows a sophisticated understanding of how to encourage desired change within existing, functioning, organizational and administrative structures. ISNAR does not coerce NAROs into a rate or magnitude of change which the latter are unable to incorporate comfortably into their systems. The pace at which ISNAR works with NAROs maximizes the sustainability of their organizational change, capacity growth, and performance.

The area in which a NARO requests assistance may not, in fact, be the area in which its most important problems reside. Unless an initial, comprehensive diagnostic review is undertaken, it may only become clear after a significant investment of time and effort, that improvement in the identified area is dependent upon prior changes in other areas of policy or research management.

NAROs are complex systems that function with varying levels of effectiveness and efficiency. An adjustment to one part of an organization can result in unexpected challenges arising in other parts. As a result, in the natural evolution of collaboration, ISNAR's involvement may become increasingly complex and demanding in terms of time and other resources.

NAROs change and mature as ISNAR continues to work with them. Maturation is a common goal sought by both parties. However, as they mature, NAROs become more critical, more autonomous partners, less malleable, and more reflective. NAROs become more challenging partners for ISNAR to work with.

Over time, ISNAR's activities with a NARO often range over advisory services and research, as well as training. One type of activity naturally merges into another as logical and sequential components of the solution to the original problem, so the supposed "boundaries" between each of these types of activities becomes blurred.

ISNAR has developed the flexibility to work with NARS of differing levels of development. The ability of ISNAR officers to respect and work comfortably with NARO managers who may at times be critical of certain suggestions or courses of action is valued.

ISNAR officers and their NARO counterparts have, on the whole, established very solid personal relationships as well as sound professional relationships. This critical interpersonal ability on the part of ISNAR officers inevitably enhances their individual professional work with NAROs and, further, contributes a positive image of ISNAR as a professional institution.

Most ISNAR officers have multiple responsibilities in many countries and therefore have intermittent contact with their clients. It would appear, however, that this is not a "constraint," since the periods in between missions of intense activity are in fact incubation periods during which NAROs modify and integrate new ideas into their existing structures and patterns.

ISNAR as a learning institution

ISNAR and NAROs learn from one another in a mutually beneficial way. To maximize the benefits of the learning, ISNAR must keep better records of its activities, results, and lessons learned.

ISNAR has set itself the task of testing organizational assessment tools on itself (ISNAR 1992, 44). It might do well to also consider modeling a broader range of management behaviors, including some of those that it recommends to NAROs. By doing so it would enhance not only its credibility in the eyes of its partners but also its own performance.

ISNAR's services are largely demand-driven, thereby requiring constant updating of its strategic plan and knowledge among its professional staff to meet NARS needs. More evidence that ISNAR is a model learning institution and publicly portrays itself as such would maintain its credibility in the eyes of its stakeholders. At the same time, it would enhance its own performance and advertise its comparative advantage.

As ISNAR's professional staff works with maturing NAROs, the demands made on the breadth and depth of their technical and interpersonal skills increase. As a learning organization, ISNAR must assign time for professional staff to extend and deepen their skills on a regular basis, otherwise their effectiveness and their credibility in the field may suffer.

Over the last few years, ISNAR's professional cadre has been more in flux than that of many NAROs. Hence NAROs' corporate memory of professional interaction with ISNAR may exceed ISNAR's. As a result, ISNAR may underestimate the stature it enjoys as a long-standing, reliable resource to NAROs.

ISNAR has only about 40 officers to address requests from all over the world. Therefore, certain staff members, who possess the expertise and instructional and training skills most frequently sought, are likely to become overextended by the volume of work demanded of them. There is a tendency for some staff members to overwork while on country visits and, also, at headquarters. This limits, among other things, the possibilities for reflection, consolidation of experience, and professional development.

Regarding impact

ISNAR's main direct impact is on the *capacity* of NAROs. ISNAR's impact on NARO *performance* is a secondary and mediated one.

ISNAR cannot control the rate of progress with which a NARO does or does not introduce recommended changes to its management policies and procedures, or tailors them to meet its needs.

ISNAR may never be (nor should it expect to be) *fully* privy to all the reasons why NAROs undertake or do not undertake any specific course of action. NAROs are complex and maturing systems and are not primarily or directly accountable to ISNAR.

Regarding the perspectives of NAROs

NAROs may hold mutually incompatible views of ISNAR simultaneously. On the one hand, they retain their own autonomy and view ISNAR's role as merely advisory or consultative. On the other hand, NAROs can regret that ISNAR's contributions to their development and change are not more far-reaching. The ideal or exact "end point" of any ISNAR collaboration therefore, can always be disputed.

NAROs' views of their interaction with ISNAR can be different from ISNAR's views because their stances are, inevitably, not the same. ISNAR tends to see its activities in terms of one or a series of relatively short missions with an intensive focus on a particular management issue, often conducted by a single ISNAR professional officer working in collaboration with one or more counterparts in the NARO. NAROs tend to see their interactions with ISNAR as influential contributions in support of their ongoing development—supplementary nourishment for continuous growth. Some NAROs' senior managers perceive their institution's collaborative activities with ISNAR as providing a management "school" for promising scientists and managers.

There is considerable potential for both parties to underestimate ISNAR's contribution to NAROs' growing management capacity. ISNAR's corporate memory tends to be informal and deficient; NAROs must maintain their autonomy and, ultimately, take responsibility for their own performance. ISNAR would do well to record the successes achieved and lessons learned in its partnership activities with the NARS.

Regarding externally funded projects

If ISNAR and NAROs initiate a project with financial support from a donor, they may jointly accept conditions laid down by the donor which may be less than ideal in terms of the realities of undertaking organizational development. The focus of the project may change from satisfying the need originally expressed by the NARO to satisfying the donor's desire for the project to unfold in the precise way and within the exact time frame that was originally proposed. Since institutional change seldom runs to plan, unrealistic donor expectations are unlikely to be met. In this way, the viability of a sound project may be unjustifiably put in doubt.

Areas requiring attention

It would be relatively easy to provide a list of areas in which ISNAR needs to strengthen itself. Suggestions are contained in the survey of NARS leaders, the stakeholder survey, and the country case studies. It is more challenging to suggest a robust starting point—one point that gives cohesion to the various and apparently disparate areas suggested as individual targets for improvement. ISNAR's mandate might appear to be the logical candidate, but that mandate is sufficiently broad to give rise to interminable discussion.

ISNAR has functioned as an institution for more than 15 years. In that time it has developed a respected identity and role in the international community. The time is ripe for ISNAR to refine that identity, establishing a niche for itself and building on the reasons for the respect that it attracts, fortified by its comparative advantages and using these to raise it to unparalleled excellence.

By "niche," we mean a precise area within a market. In this case we refer to the "wish list" of NARS, for which ISNAR can demonstrate specialized expertise and a comparative advantage (Lusthaus, Anderson, and Murphy 1995, 34). ISNAR would benefit by concentrating its limited human and financial resources where they are most capable of producing results in conformity with its mandate and mission (Drucker 1992).

By identifying its niche, the nature, direction, and priority of all of the improvements currently demanded of ISNAR would come more clearly into focus:

- Staff would be provided with a coherent vision around which to unite.
- Clients and the relative priority between NARS as systems and component entities as organizations would become clear.
- ISNAR would be able to define not only a strategy (as it can and does at present) but also an operational decision-making process that would permit it to address and prioritize requests.
- ISNAR would be better able to communicate to partners, stakeholders, and others what it is, what it does, and how and why it does it.
- ISNAR would be able to develop an effective market plan for itself.
- ISNAR would have the means to identify and protect itself against incompatible donor conditions.
- ISNAR would distinguish itself from other international and national providers of apparently similar services and products.
- ISNAR would identify, communicate, and negotiate potential joint projects and ventures more effectively with other IARCs, donors, and potential partners.
- ISNAR would be provided with guidance on what skills to seek in its staff and under what conditions to employ them.
- ISNAR would be able to better determine why, when, and how to deliver services for free or to charge for them.

- Clear criteria would be provided, to which both ISNAR and partner governments/institutions must adhere as conditions for collaboration.
- ISNAR would be assisted in the selection of collaborative activities where probability of implementation is high.
- Coordination with IARCs and other centers of excellence would be greater.
- Decision-making regarding the use of outposted staff would be assisted, at least at the regional level.
- Focus on developing tools and processes with broad applications among NARS would be greater, so that efforts can be optimized and individual demands reduced.

Most important of all, a clearly identified niche would provide ISNAR with a central point of reference to which all current and future strengths and weaknesses bear an identifiable and measurable relationship. If "what gets measured gets done" (Osborne and Gaebler 1993), ISNAR would benefit from identifying what aspects of its performance it finds important enough to measure on an ongoing basis, and to use the measures to improve its effectiveness and efficiency (Allen 1996).

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Chapter Two – Methodology for Assessment of ISNAR's Achievements, Impacts, and Constraints[2]

R. Mackay, H. Hambly, and D. Horton

1. Introduction

CGIAR has recently established a new, independent evaluation function, the central element of which is the Impact Assessment and Evaluation Group. One of the first major activities of the group was to organize a CGIAR Workshop on Impact Assessment and Evaluation at ISNAR in April 1996. Most discussions at the workshop focused on the assessment of production-related impacts. However, many international agricultural research centers are also concerned with the assessment of institutional impacts on NARS and NAROs.

ISNAR has considered methods to assess its impact in the past (Nielson 1989; Goldsmith 1993) and it is now initiating more systematic work in the area of institutional impact assessment. The first step is an assessment of ISNAR's achievements, constraints, and impacts over the last five years. This initial exercise will contribute to the development of a methodology that ISNAR and other organizations—national and international agricultural research organizations and donors—could use in the future to assess their institutional impacts. A report on this initial phase will also serve as an input for ISNAR's third EPMR.

The current work is based on previous experiences with impact assessment and organizational performance assessment at ISNAR (Horton 1990; ISNAR 1991; Peterson 1994) and, also, on a framework for institutional assessment published recently by IDRC, Canada (Lusthaus et al. 1996; Lusthaus, Anderson, and Murphy 1995).

This chapter summarizes the results of a planning workshop for ISNAR's impact assessment work which was carried out in 1996.

2. Workshop Objectives

The ultimate goal of the workshop was to contribute to the development of a methodology for assessing institutional impacts. This methodology was to be implemented and built into ISNAR's system for planning, monitoring, and evaluating its own activities, and utilized in its advisory and training activities with NARS. The more immediate purpose was to develop a methodology for assessing ISNAR's performance for the preparation of a report on ISNAR's achievements, constraints, and impacts over the last five years. The following specific outputs were expected from the workshop:

- a study team, composed of ISNAR staff members and consultants, who were familiar with the IDRC framework for institutional assessment, and prepared to carry out an institutional assessment of ISNAR's achievements, constraints, and impacts
- a methodology for assessing ISNAR's achievements, constraints, and impacts, including plans, schedules, and instruments for data collection, analysis, and reporting to ISNAR and the EPMR panel
- terms of reference and specific assignments for members of the study team

[2] Report on a planning workshop held June 10-14, 1996 at ISNAR headquarters in The Hague. We would like to thank the workshop participants for their inputs in developing the study methods.

3. Organization of the Workshop

Several documents pertaining to the subject were distributed for review prior to the workshop. The workshop included a series of plenary and working group sessions, and a number of presentations on ISNAR and on institutional assessment methods were given. Most of the time was used to develop the assessment methodology, and the required instruments, plans, and schedules for collecting and analyzing information and reporting on results. The workshop schedule follows:

Monday, 10 June:

Introduction to the workshop, participants, and ISNAR
Expectations and objectives of meeting
Brief presentations on IDRC and Universalia experience in institutional assessment

Tuesday, 11 June:

Presentation to ISNAR staff and discussion of the IDRC framework and key issues for the study
Study design and methodology

Wednesday, 12 June:

Meeting with ISNAR Director General to discuss terms of reference and budget for the study
Design NARS survey, stakeholders survey, and case study instruments

Thursday, 13 June:

Design NARS survey, stakeholders survey, and case study instruments (continued)
Identification of relevant materials and information sources

Friday, 14 June:

Presentation to ISNAR staff and discussion of the study methodology
Development of schedule and budgets for Phase 1

4. Participants in the Assessment Process

In the past, ISNAR has engaged in internal evaluation exercises. Given the importance of this new initiative, it was decided to involve external evaluators with fresh perspectives and new ideas and experiences, with a range of evaluation methods in different settings.

Five consultants were selected to include experienced individuals from NARS, stakeholder agencies and academic institutions:

- Jairo Borges – Evaluation Specialist, University of Brazilia, Brazil
- Seme Debela – formerly Director of IER, Ethiopia; member of the team that recently reviewed institutional strengthening research and services in CGIAR
- Charles Lusthaus – senior author of the institutional assessment framework for IDRC, Canada
- Ron Mackay – Professor of Education, Concordia University, Canada (team leader)
- Terry Smutylo – Head of the Evaluation Unit, IDRC, Canada

Each of these individuals has extensive evaluation experience in different fields.

Eight ISNAR staff members participated in the workshop full-time: Govert Gijsbers, Helen Hambly, Doug Horton, Francis Idachaba, Willem Janssen, Brad Mills, Warren Peterson, and M.M. Rahman. The Director General of ISNAR, Christian Bonte-Friedheim, the Deputy Director General, Howard Elliott, and the Director of the Management Program, Paul Perrault, participated on a part-time basis.

To ensure full staff participation, two special ISNAR seminars were organized during the week: On Tuesday morning, June 11, a seminar was held to discuss the assessment framework and preliminary ideas for its use with professional staff; on Friday afternoon, a general staff meeting was held to discuss more advanced ideas on the assessment exercise and to get staff input. Additionally, the external consultants were available for meetings with staff at lunchtime during the week.

Workshop discussions were intense and productive. The five external specialists quickly developed a team spirit and planning for the study advanced quickly. After the workshop, the external consultants played key roles in finalizing and testing the study methodology and instruments, and in data gathering, analysis, and reporting on Phase 1 of the assessment exercise. Several ISNAR staff members also participated in methodological discussions and in-house data gathering. The travel and logistics for the country studies (which were conducted by consultants) were arranged by ISNAR.

5. Workshop Outputs

During the workshop, the study team was formed and it became familiar with the IDRC impact assessment framework. Draft methodology documents and terms of reference for study team members were prepared. Following the workshop, the methodology documents were finalized and a project proposal on institutional impact assessment was prepared and submitted to donor organizations. The following paragraphs outline the workshop's main methodological outputs.

Analytical framework

The methodology for ISNAR's impact assessment exercise is based on the IDRC institutional assessment framework, in which *performance* is viewed as a function of the institution's *environment*, and its *institutional motivation*, and *capacity*. Elements from the Technical Advisory Committee Secretariat's criteria for developing measurement performance systems were also incorporated (TAC Secretariat 1996).

In Phase 1, attention was focused on ISNAR's performance, and its impacts on the environment, motivation, capacity, and performance of NARS and NAROs. These terms are illustrated in Exhibit 2.1.

The assessment framework was operationalized through a set of five component studies designed to assess ISNAR's achievements, constraints, and impacts:

- survey of leaders of NARS/NAROs
- survey of ISNAR stakeholders
- country case studies
- Meta-Evaluation of ISNAR reviews
- ISNAR output inventory

Each of these studies is outlined below. The timeline for Phase 1 activities is shown in Exhibit 2.2 and the budget in Exhibit 2.3.

Survey of agricultural research leaders

ISNAR's primary, direct clients are national agricultural research organizations and systems. Hence, the perceptions of NARS/NAROs leaders and managers on ISNAR's achievements, constraints, and impacts are central to the study.

The study team decided on a survey of approximately 100 leaders of NARS and NAROs, selected from lists of participants in recent regional fora and international meetings. The

following distribution of interviews reflects the regional balance of ISNAR activities during the review period:

Spanish-speaking Latin American and Caribbean	22 interviews
English-speaking Caribbean	3 interviews
West Africa	20 interviews
Eastern Africa	20 interviews
Southern Africa	10 interviews
Asia	20 interviews
West Asia and North Africa	10 interviews

In light of the short amount of time available to perform the survey, it was decided to conduct the interviews by telephone. IDRC conducted the interviews in the English- and French-speaking countries. The University of Brazilia conducted interviews in Latin America, and processed and reported on the survey results. The NARS interviews were accomplished in August 1996; analysis and write-up took place in September and October of the same year.

Survey of ISNAR stakeholders

Stakeholders (e.g., members of CGIAR, and regional and international organizations) represent another important group for assessing ISNAR's impact and its external environment. ISNAR provided a list of 101 stakeholders, from which the external consultants picked a sample of 20 individuals to interview. IDRC conducted telephone interviews of these individuals, analyzed the survey data, and reported on the results. The stakeholder interviews were conducted in August 1996; analysis and write-up in September and October of the same year.

Country case studies

Fifteen countries were identified as potential case studies. Given the limited time and resources available, the study team decided that priority would be given to three countries representing a range of types and duration of contact with ISNAR (policy and management research vs. training vs. advisory services; short- vs. long-term collaboration). The countries selected were Kenya, Morocco, and Uruguay. The Kenya and Morocco case studies were completed in August 1996; the Uruguay study in September.

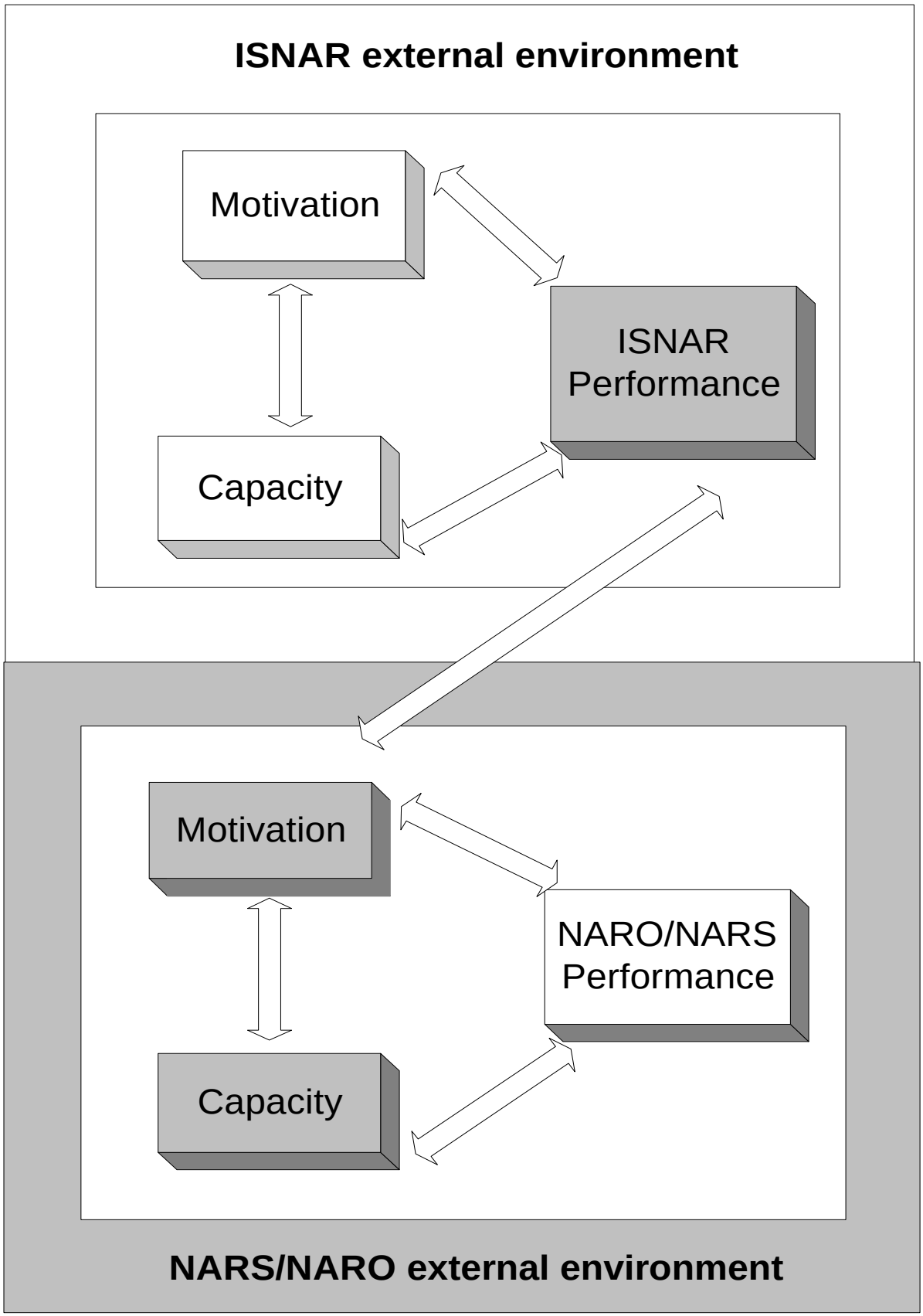
Output inventory

The study team requested that ISNAR assemble an inventory of its major outputs during the period under review, in relation to the countries with which it had worked and the principal working areas. These outputs include documents produced by ISNAR and its staff, training activities, and results of advisory missions. The inventory was complete in August 1996.

Meta-Evaluations of ISNAR reviews

ISNAR has conducted seven internally commissioned external reviews and three external project evaluations since 1991. A content analysis of these documents was undertaken by the external consultants and the results were included in the final report.

Exhibit 2.1 Model illustrating organizational performance and institutional impact



Principal areas of data collection

Exhibit 2.2 Timeline for Phase 1 activities

Component	June	July	Aug.	Sept.	Oct.
Case studies					
Draft instrument	23				
Review instrument	23-30				
Finalize instrument		7			
Prepare fieldwork	23-30				
Field missions		Morocco, Kenya	Uruguay		
Draft report			30		
Feedback		25 Morocco	30 Kenya	15 Uruguay	
Finalize report					31
NARS survey					
Draft instrument		14			
Review instrument		21			
Finalize instrument		21-28			
Translation			1		
Testing and faxing		29-	5		
Interviews			10-30		
Data analysis				10	
Draft report				20	
Feedback				30	
Finalize report					31
Meta-Evaluation of ISNAR reviews					
Draft instrument	17				
Test instrument	24				
Finalize instrument	24				
Review instrument		10			
Draft report			15		
Feedback				1	
Finalize report				15	
Stakeholder survey					
Draft instrument		14			
Test instrument		29-	5		
Finalize instrument			15		
Interviews			15-	5	
Analysis				10	
Draft report				20	
Feedback				25	
Finalize report					1
Inventory of ISNAR outputs					
Design		14-			
Data entry		26-	5		
Analysis			15		
Draft report			30		
Feedback				15	
Finalize report					1

Exhibit 2.3 Budget for Phase 1

	(US$)
Consultants (152 person-days)	47,970
Travel/Per diem	
Case studies	10,195
June meeting	15,200
October meeting	10,600
Research assistance and related expenses	
Case studies	3,600
NARS survey	8,500
Stakeholder survey	5,000
Total	**101,065**

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Chapter Three – Stakeholders' Views on ISNAR: Survey Results

T. Smutylo and C. Sander

1. Introduction

This report summarizes the findings of a telephone survey of 24 stakeholders of ISNAR.[3] It elicits ISNAR's strengths, weaknesses, constraints, and suggestions for improvements from the survey findings, as well as statements concerning ISNAR's outputs, impacts, and reputation. In the three subsections that follow, the main trends of the feedback are summarized; these are complemented by a summary of respondents' comments on ISNAR's key role, strengths, weakness, suggested improvements, and constraints in Exhibit 3.1.

A brief elaboration on selected individual issues raised by the survey responses follows. These include: the level of familiarity with ISNAR and its work; ISNAR's role in CGIAR and the international agricultural research system; ISNAR services; and ISNAR staffing.

2. Main Findings: ISNAR's Role in CGIAR and Contributions to Agricultural Research

The main survey findings relate to three primary themes: ISNAR's role in the global agricultural research system and its contributions to agricultural development; its vision and niche; and constraints to ISNAR's work and impact.

ISNAR's role in and contribution to the global agricultural research system

> ***Finding:*** *ISNAR's activities in capacity strengthening, liaison endeavors, and advocacy form an important component of CGIAR and the international agricultural research system, as well as general support to NARS.*

Overall, the stakeholders surveyed considered ISNAR an important component of the international agricultural research system and general support to it—especially regarding support in institution-building, and strengthening of NARS and their institutions in developing countries. Two-thirds of the respondents see ISNAR's principal roles being in the institutional strengthening of national agricultural research, advocacy for NARS, and acting as a liaison among NARS and with other international organizations. One respondent referred to it as leadership in "the emerging global research system," linking NARS and regional organizations in the North and South, and supporting structural and organizational shifts. Roughly one-quarter of those who see ISNAR in a leading role would also like to see ISNAR address new trends relevant to NARS in topically complex areas such as biotechnology, natural resource

[3] Sample selection was 27 stakeholders + 3 test interviews; a total of 24 respondents completed interviews. The profile of the respondents is as follows: 15 donor representatives (3 of these donors do not currently fund ISNAR); 5 collaborators; and 4 respondents who fall in neither of these two categories. The institution of 1 respondent provides core funding only; 9 provide core funding and have projects with ISNAR; 8 undertake projects or collaborate on activities with ISNAR. Among all 24 respondents, 15 have informal contacts with ISNAR, including 9 who also have a formal institutional relationship. Of the 15 who specified the country context on which they based their comments, 12 referred to Africa, 3 to Latin America or the Caribbean, and 3 to Asia (3 specified two or more countries). (See also Exhibit 3.3 "Level of familiarity with ISNAR" and the instrumentation and sample selection annexes (3.2 and 3.4, respectively).

management, ecosystems, and privatization or private sector collaboration. (See Exhibit 3.1 for more detail.)

"[We are] quite excited about some of ISNAR's work—not in-country, but the more general work—for instance, on institutional performance assessment, forms for accountability, etc."[4]

Stakeholders see ISNAR's contributions to date in the areas they identified for the organization's leadership role. For instance, they commented on ISNAR's achievements in liaising between CGIAR and NARS; raising awareness for the needs and context of NARS; strengthening research institutions and national systems in research management and priority setting; and helping those institutions and systems become better negotiation partners for donors. (See also Exhibit 3.1.)

"In terms of ISNAR's principal achievement: maintaining public attention on national research programs and associated policy issues."

ISNAR's vision and niche

***Finding**: ISNAR needs a clearer vision and strong leadership to better focus on its strategic niche and improve its performance.*

Along with citing strengths and contributions, half of the respondents felt that ISNAR needed a clearer vision and strong leadership to better focus its activities and better define its strategic niche. Four individuals raised it as one of ISNAR's primary constraints. Also, half of all interviewees directly expressed the view that ISNAR could and should do even better. At the same time most acknowledged that it was not an easy task, in part given the mandate and the context in which ISNAR works—a context stakeholders characterized, for instance, as lacking in support to agricultural research as a national priority; and by the weakness of some NARS, particularly in Africa.

"The initial support period or 'honeymoon' is over for ISNAR. This is the second decade; there is more pressure to be clear about what it is they are offering, now that they are a mature center."

"ISNAR does a useful job and a very difficult job in terms of the diversity of NARS. But there are other players in this competitive world. ISNAR has to look carefully at what it does well and play to those strengths."

Respondents who touched on ISNAR's "bi-focus" on research and technical assistance commented on a perceived tension in the weighting of these two spheres of activity. The technical service, in symbiosis with a focused research component, was more important to most respondents. This finding is not surprising considering that the majority of the stakeholders responded to the survey based on their experience as development assistance practitioners rather than as researchers. Four interviewees, however, expressed concerns about

[4] All quotes in this chapter were recorded during the stakeholder interviews.

indications of a lack of attention given to research and a perceived decline in the conceptual basis for the work.

> *"There needs to be a creative tension between research and action, or the advisory services which feed into the information function. This synergy of research, advisory, and information needs to be articulated in ISNAR's vision."*
> *"[I wonder] whether the conceptual base is adequate in terms of the research, which lays the basis for ISNAR involvement with the NARS. . . . [I] sense a decline."*

Four interviewees suggested that components of ISNAR's work could be fulfilled by other research institutions or consulting firms, but had different views on the specifics. One, for example, considered ISNAR dispensable in terms of the services it provides to them, indicating that other research institutions or consulting firms could fulfill that role; however, the same respondent also considered ISNAR as playing an important intermediary and liaison role. Others had contrary opinions. For instance, one respondent considered it important to have one locus of knowledge and experience for continuity, as opposed to working with different consulting groups. Another considered ISNAR's advantage to be in its position as an independent, international institution and part of the CGIAR system.

> *"ISNAR's comparative advantage is in the planning phase of agricultural research, not in the implementation phases; there are other institutions [that do that]."*
> *"[The program study we worked on] could have been done by consultants, but is better done by an institution with institutional memory, like ISNAR, because it can then apply and disseminate [the findings]."*

According to respondents speaking to ISNAR's technical assistance, these services should continue to concentrate on strengthening NARS, but need to be adjusted in focus, approach, and synergy, and to be of a consistently high quality. The stakeholder responses show that ISNAR's reputation for the quality of its work is in the range of medium to high and is seen to have room for improvement, for example, in the level and language of publications. (See Exhibit 3.1, and sections on "Services" and "Staffing and capacity" for more detail.)

> *"There has been a problem with ISNAR and some of its publications in terms of developing 'ISNAR speak.' It gets in the way of effective communication. They should focus on producing in clear and plain language, particularly given that English and French are second languages for many researchers."*

Constraints to ISNAR's work and impact

***Finding**: ISNAR is constrained by its limited core budget, size and, also, the context and complexity of its task, as well as a lack of a clearer focus for its activities*

Half of all respondents considered the budget and size of ISNAR as two of the main constraints curtailing its capacity to more effectively meet demand. Among these respondents, however, some pointed out that these were symptoms of larger issues—the priorities of national and international organizations, or those of ISNAR itself—or that a larger budget was not the solution. In this case, what was needed instead was a more strategic focus and increased cooperation. Two others specifically stated that funding was not among the primary constraints.

About half of the interviewees set out components of ISNAR's context as constraints. For instance, they commented that working with research institutions in developing countries is a difficult task. Or they said that ISNAR generally faces problems similar to other small development and research institutions working in the low priority field of agriculture and the "soft" area of institutional and capacity building, where results are subject to many external factors. Other constraints mentioned included the lack of a clear vision, limited regional presence, and the experience and number of staff (Exhibit 3.1).

"*But despite the constraints, ISNAR has done a great job.*"

Exhibit 3.1 Overview of stakeholders' views on ISNAR

ISNAR's key roles in the global agricultural research system
– Provide guidance and tools for institutional strengthening, and organizational change and restructuring in NARS
– Act as link or intermediary between NARS in developing countries and international and national systems of developed countries
– Raise awareness and understanding in international community of situation, needs, policy issues, and priorities of NARS
– Provide leadership in emerging global research system linking NARS in the North and South—strengthening regional organizations; advancing regional collaboration; cooperating closely and devolving functions; supporting structural and organizational shifts; addressing new trends such as biotechnology, natural resource management, privatization and private sector collaboration, ecoregional programming, innovation (rather than just technology transfer); proactive development of tool kits, training, advisory activities, approach, methodology, monitoring, and evaluation
– Serve as a knowledge and information broker
ISNAR's main strengths
– Strengthening NARS and national agricultural research
– Strengthening agricultural research community—better policy and planning capacity, better able to express their needs and demands and are more realistic, easier for donors to support, better negotiators and better position vis-à-vis donors
– Facilitating broader national policy dialogue for agricultural research, giving weight and safeguarding against local politics; receives higher priority from government
– Contributing to closer link between research and extension, and better client-orientation
– Developing tools and methodologies (rather than application); e.g. program planning and priority setting
– Quality analysis and publications, competent staff
– Training highly relevant and appreciated
– Acting as an information source providing access to global data and knowledge
– Generating new information and data that would not otherwise exist, e.g. indicators, biotechnology
– Reputation as independent, international organization, knowledgeable about the institutions, the players, and institutional strengthening
– Advocating and responsive to needs of developing countries rather than to those of donors
– Linkage function between NARS and CGIAR; NARS to NARS fertilization
– Contributing to evolution of relationship between NARS, CGIAR centers, and CGIAR itself; putting NARS' situation and needs on CGIAR and international agenda
– Creating platforms for international exchanges on agricultural research
– Contributing, in a timely and significant fashion, to building regional systems (e.g. ASARECA) and initiatives such as Intermediate Biotechnology Services (IBS)
– Often filling vacuums with guiding documentation

Continuation

ISNAR's main weaknesses

– At times too "top-down," "North American," blueprint approach
– Level and language of some methodologies and publications demanding; too academic and strategic, not applied and practical enough
– Strengthening individual NAROs rather than NARS and working only with government side of NARS
– Lack of focus, clear vision, and communication of both
– Lack of cooperation with other centers and institutions
– Insufficient capacity to follow up and follow through on recommendations and organizational change processes (e.g. with master plans)
– Quality and availability of expertise can stand and fall with individual staff
– Low regional presence
– Lacking expertise in management science
– Dichotomy between research and services
– Perceived decline in conceptual basis (research) for work

Institutional constraints

– Budget and general capacity to respond to demand or to provide follow-up or continuing support
– Lack of clear vision, mandate, and strategy
– Field presence and accessibility for NARS
– Organizational culture and approach; number and expertise of staff
– Lack of cooperation with other centers
– ISNAR mission, role, and approach not necessarily well understood

External constraints

– High demand for assistance and diverse needs and priorities of NARS; priorities of national governments vary; differing levels of capacity
– Continuous need to adapt to developments; number of NARS increasing; new directions and issues
– Global low priority for development assistance, research, agriculture, soft assistance (institution/capacity-building); CGIAR represents only 5% of global research effort; ISNAR, although only part of CGIAR, is responsible for addressing 95% of management and policy approaches
– ISNAR is one of two non-commodity-oriented centers within CGIAR; generally CGIAR more technical-scientific, whereas ISNAR more social science
– Small, international development, research and technical assistance institution

Areas requiring improvement

– Focus and communicate better mandate, role, niche, focus, and approach
– Develop into center for excellence on research management; increase management science capacity; adapt institutional management developments
– Clarify division of labor among CGIAR centers
– Synthesize lessons learned from research and experience, impact assessment; distill best practices
– Better regional presence and accessibility for NARS
– Better emphasize support to regional structures
– Deal more with timely and complex issues NARS will have to tackle, e.g. biotechnology, privatization, or private sector collaboration
– Offer follow-up support to implement changes (tool kits or facilitation of process)
– Find new ways of financing (e.g. private sector collaboration, services on consulting basis)
– Use more local experts
– Work with clients of NARS as well as with the research institutes
– More "quick and dirty," "how to," and client-oriented approaches for field
– Strengthen linkages to a greater extent, e.g. by expanding use of information and communication technologies, realize multiplier effect

Note: The overview is in order of relevance. In each grouping, the points are listed in order of descending frequency with which they were referred to by the stakeholders.

3. Detailed Findings on Issues Emerging from the Survey

Level of familiarity with ISNAR and its work

***Finding**: ISNAR is well known but does not adequately communicate its mandate, approach, and achievements.*

The survey results suggest that, while ISNAR is well known, it may not sufficiently communicate what it does and how it does it. One stakeholder remarked that his colleagues "have difficulty understanding how ISNAR ticks [works]." Another stated that ISNAR should better communicate its mandate. In commenting on ISNAR's recognition, one stakeholder said that "if you ask NARS for CGIAR center names, they will name ISNAR," while another said that ISNAR has something of a monopoly in what it does and that people think of ISNAR for institutional strengthening in agricultural research.

Exhibit 3.2 Level of familiarity with ISNAR

Level	Responses
High	4
Medium	14
Low	6
Total	**24**

Another indicator in this context is the stakeholders' level of familiarity with ISNAR and its work (Exhibit 3.2). Between one-quarter and one-third of the interviewees did not respond to questions regarding the in-country projects for strengthening NARS, often because they considered themselves to lack adequate knowledge to comment or answer (Exhibit 3.3).

The interviewer rated each interview as to the level of familiarity of the respondent with ISNAR. Most were rated "medium" (Exhibit 3.2). Stakeholders clearly responded from different knowledge bases, which was partly linked to the organizational relationship (e.g. core funding vs. special projects) and a function of the level of overlap in priorities with ISNAR. Not surprisingly, however, the most knowledgeable were those who had worked at, or very closely with, ISNAR at some point in their careers.

ISNAR's role in CGIAR and the international agricultural research system

***Finding:** ISNAR fills what used to be a gap in the CGIAR support system.*

Most respondents see ISNAR's role as important and indispensable until NARS and regional bodies are sufficiently strong to take on ISNAR's current tasks themselves. As five of the respondents put it, if ISNAR did not exist, another institution would have to fulfill its role or ISNAR would have to be created. One respondent pointed out that ISNAR was established as a non-commodity-oriented center to strengthen NARS, to fill a gap within the CGIAR support system. A couple of respondents pointed to the fact that ISNAR is also very different in that, with the exception of the International Food Policy Research Institute (IFPRI), it is the only center within the CGIAR that is not commodity-oriented, that it has a larger and more difficult mandate, and that it maintains a social science focus in the techno-scientific environment of CGIAR.

"ISNAR was given the most difficult task of the CGIAR: to strengthen NARS."

"[A comparative advantage is the] cross-fertilization between NARS that ISNAR can do and no one else; I have seen them do it and it doesn't seem to be picked up by anyone else."

Overall, most interviewees consider ISNAR an important component of the CGIAR system and instrumental to the international as well as the national systems; this is mostly because it has raised and maintained international awareness about the situation, needs, and demands of the NARS. Half commented specifically on international linkages and awareness raising; half also referred specifically to ISNAR's contributions to strengthening national agricultural research. According to individual respondents, ISNAR has played an important role in:

- providing an interface between the international system and the NARS of developing countries, and raising awareness and understanding in CGIAR and among its members for the situation and needs of NARS
- advocating for NARS to "remain on the agenda" and "be invited to the table," and helping integrate new developing country donors to CGIAR
- creating platforms for exchange on agricultural research, and research policy and management
- strengthening the capacity of NARS institutions to manage research more efficiently and effectively, e.g. better client-orientation, and priority setting and communication to donors; as a result, donors have found these institutions to be easier to cooperate with and support
- restructuring of NARS
- linking NARS with each other

The value of the contributions was highlighted in comments regarding:

- timely initiatives, such as the IBS
- readily available methods and tools and their generally high quality
- high-quality training
- the seminal character of selected publications such as *Science Under Scarcity*, and high quality of the country case studies and briefing notes
- the master plans developed in selected countries

***Finding**: Institutional strengthening tasks need to be better coordinated among the CCGIAR centers.*

One out of three respondents commented on the overlap between ISNAR and CGIAR and other organizations on institutional strengthening work and, particularly, between ISNAR and IFPRI on the policy research; or they indicated that there is a need for better cooperation and/or delineation between the CGIAR centers. The few solutions offered span the spectrum: one suggestion was to concentrate all institutional strengthening activities in ISNAR, disengaging the commodity-oriented centers from this task except where commodity-specific issues play a role; another proposed that ISNAR coordinate the links between CGIAR and NARS, and build the capacity of the other CGIAR centers to strengthen institutional capacity in the field. Four respondents alluded that ISNAR should not be involved with policy, other than in terms of providing guidance to its partners on how to perform policy research. Another interviewee suggested ISNAR needed to work more at the national decision-making level in synergy with IFPRI to improve effectiveness. Three respondents suggested a strong Africa focus.

Finding: *ISNAR should strive for a healthy and synergistic balance between its research and technical assistance activities.*

Commenting on the activity areas of research and service, most respondents suggested that there should be a healthy balance and synergy between the two. A total of 16 respondents commented on the dual areas: 14 supported a balanced approach; 1 emphasized research and would like to see service activities offered as part of an ISNAR consulting arm; and another did not see any need for further research and suggested that ISNAR should focus exclusively on the service side. Of the 14 who favored a balance, 4 expressed concerns about indications of a lack of attention given to research in recent years.

Finding: *ISNAR helps stakeholders fulfill their mandate.*

Commenting on the relevance of ISNAR's work to the stakeholder agencies, over two-thirds of the respondents (71%) stated that ISNAR helps their institution fulfill its mandate and one-third rated the benefits of ISNAR's work to their institution as *high* or *medium-high* (see Exhibits 3.3 and 3.4). To explain their lower rating, four of the respondents indicated that the relevance is very much a function of the overlap in mandate or common priorities.

Services – awareness and quality, relevance of outputs, and impact

Finding: *ISNAR is best known for its capacity-building in research management, its methods and tools, priority setting and planning, training, and publications.*

The individual projects or services with which respondents were familiar received high marks in many cases but, also, criticism. Over half of the respondents commended one or several of the following for relevance, usefulness, or ready availability: tools and methodologies in general; priority setting and program planning in particular; publications; and training.

Rating the relevance of ISNAR in-country projects for strengthening NARS, about one-third of the respondents answered "somewhat relevant;" an equal number answered "highly relevant" (see Exhibit 3.3). A quarter responded that they "don't know," because they felt that 1) NARS would have to answer this question themselves; 2) that it was too early to tell; or 3) that they had insufficient knowledge to judge. One respondent raised the question that, while the projects may be relevant, are they sufficient?

Finding: *Overall, ISNAR projects and services receive high marks, but criticism as well.*

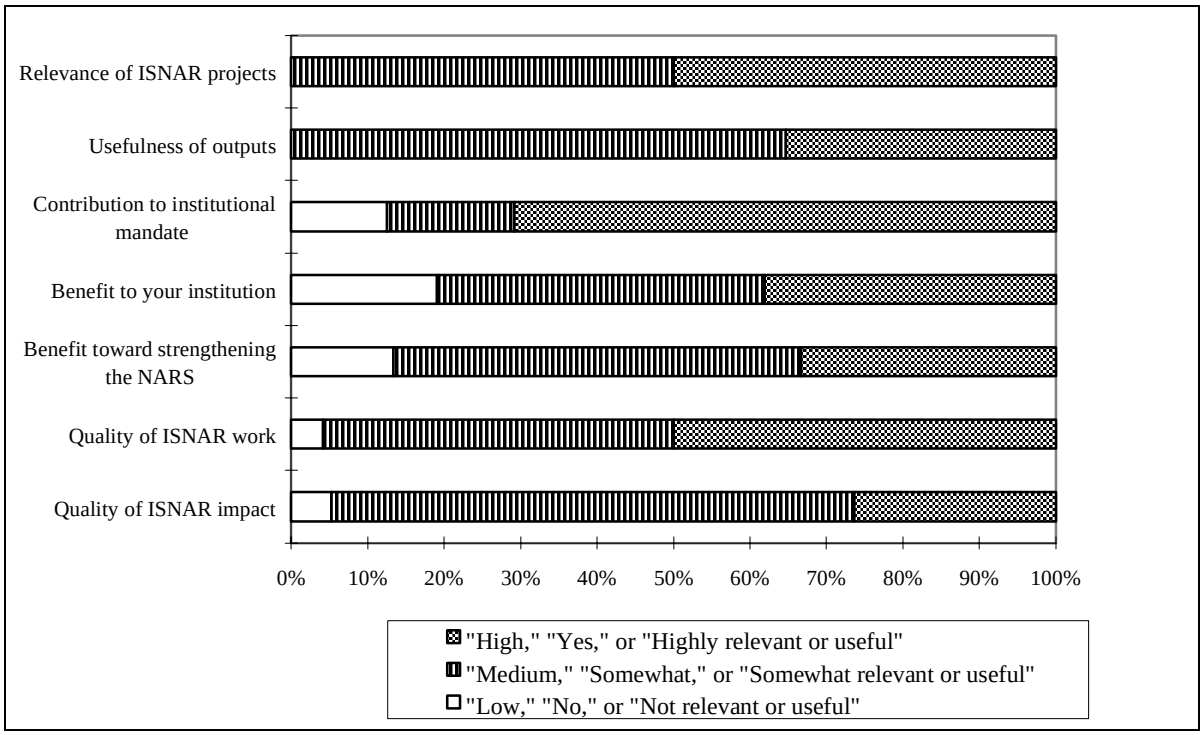
Exhibit 3.3 Stakeholder ratings for ISNAR's work and reputation[1]

Questions and Ratings	Responses (n=24)	%
Would you say that ISNAR's in-country projects for strengthening NARS are:		
Irrelevant	0	0.0
Somewhat relevant	9	37.5
Highly relevant	9	37.5
Don't know	6	25.0
Total	**24**	**100.0**
Do ISNAR's in-country projects produce usable outputs that have a practical application?		
Not useful	0	0.0
Somewhat useful	11[2]	45.8
Very useful	6	25.0
Don't know	7	29.2
Total	**24**	**100.0**
Do ISNAR projects, products, and services help your institution fulfill its mandate?		
Yes	17	70.8
No	3	12.5
Somewhat	4	16.7
Total	**24**	**100.0**
Overall, how would you rate the benefits of ISNAR's work to your institution?		
Low	3	12.5
Low-medium	1	4.2
Medium	9	37.5
Medium-high	4	16.7
High	4	16.7
Don't know/no rates	3	12.5
Total	**24**	**100.0**
Overall, how would you rate the benefits of ISNAR's work toward strengthening NARS?		
Low	0	0.0
Low-medium	2	8.3
Medium	8	33.3
Medium-high	2	8.3
High	3	12.5
Don't know/not rated	9	37.5
Total	**24**	**100.0**
As far as you know, what is the reputation of ISNAR with respect to the quality of its work?		
Low	0	0.0
Low-medium	1	4.2
Medium	11	45.8
Medium-high	6	25.0
High	6	25.0
Total	**24**	**100.0**
As far as you know, what is the reputation of ISNAR with respect to the quality of its impact?		
Low	0	0.0
Low-medium	1	4.2
Medium	13	54.2
Medium-high	2	8.3
High	3	12.5
Don't know/not rated	5	20.8
Total	**24**	**100.0**

[1] "Don't know" was chosen when respondents did not know, or did not want to comment or rate due to limited knowledge: mixed ratings (low-medium and medium-high) were chosen by respondents and made available to them in cases of hesitation, but were not part of the original standard instrument. Any minor numerical discrepancies are due to rounding.

[2] Four of these individuals responded, "In some cases yes; in others no."

Exhibit 3.4 Percentages of stakeholder ratings for ISNAR's work and reputation



Notes: "Low" includes low and low-medium ratings given in Exhibit 3.3; "high" includes medium-high and high ratings. Percentages exclude those stating "don't know" or those providing no rating.

Source: Stakeholder interviews

Another interviewee also pointed out a distinction between indirect, longer-term, and direct contributions. This respondent underscored that ISNAR contributes much in the first category, for example, through its linkage work and training materials, and this contribution should also be rated highly. Two respondents suggested that ISNAR seemed to be quite successful in smaller countries and less so in larger ones.

Rating whether the in-country projects produce usable outputs, almost half of the respondents (46%) considered them "somewhat useful" and a quarter "very useful" (see Exhibit 3.3). Respondents, however, qualified the relevance and usefulness, for example, as dependent on the willingness of the government or the local situation; on collaboration with other donors; or, in isolated cases, on the effectiveness of ISNAR staff.

"ISNAR has had a major influence on NARS. It has influenced a few NARS and several NARIS on organization and management. It influenced some on methodologies, planning, monitoring and evaluation, and information systems. In a few cases, in terms of changing the institutional model, like Costa Rica, they were very successful. Rather than shaping management, Costa Rica was a NARS approach and good. In other cases, no. This can be very peculiar to the country, not to the international partner."

Exhibit 3.5 Respondents' awareness of ISNAR products and services*

Level of awareness	Product or service
High	General capacity building for research management Research priority setting Strategic planning, master plans Publications Methods and tools Workshops (research policy, management, gender) Training
Medium	NARS restructuring Newsletter Briefing notes Guidelines/manuals Country studies Specific publications (e.g. on FSR, indicators, *Science under Scarcity*) MIS INFORM Indicators work IBS, biotechnology
Low	Program planning methods Monitoring and evaluation Information and communication Ecosystem/ecoregional programming

* Note: Items were rated as "high," "medium," or "low" level of awareness based on how often they were mentioned during the interviews.

The survey asked stakeholders to name ISNAR products or services with which they are familiar. By using these replies combined with the products or services mentioned throughout the interviews, the listing in Exhibit 3.5 was compiled and a rating attached, based on how many respondents referred to them. This shows that most stakeholders highly associate ISNAR with capacity-building for research management, methods and tools, research priority setting and strategic planning, workshops, training, and publications.

Voicing criticism on ISNAR technical assistance, stakeholders commented that in this regard, ISNAR should:

- Be more focused.
- Be synergistic with other CGIAR and similar efforts.
- Build more on past experience.
- Develop regional capacity to take on ISNAR's role.
- Benefit more from organizational management expertise and research.
- Work more at the level of NARS, including non-governmental components, as opposed to selected government NAROs.
- Have a greater field presence.
- Support the change process itself rather than just the planning process for change.
- Provide more support in new areas of importance to NARS, such as biotechnology and privatization.

In terms of ISNAR's approach, 10 stakeholders responded critically, making the following comments:

- occasionally too "top-down" and "North American (pushy)"
- the level and language of some methodologies and publications are too academic and not applied or practical enough

- master plans are good but, at times, they are too much of a "blueprint approach" and too static to have any significant life span as a planning tool

> *"Its strength is at the same time a weakness. ISNAR has a clear concept of how agricultural research should be organized and structured, however, the weakness is that it tries to apply that same thing everywhere. . . . There is little flexibility to adapt to local contexts. They use the very same blueprint in francophone and anglophone Africa, even though they have very different administrative systems."*

***Finding**: ISNAR's service tends to be limited to planning and individual government institutions, and tends to lack follow-through support; field presence is also limited.*

One out of four interviewees noted a limitation of services for planning and a lack of follow-through support, such as facilitation of the change process or process tools; two respondents included this in their comments on constraints. Nine respondents remarked on the lack of follow-up work such as impact assessments, synthesizing lessons learned, distilling best practices, and realizing multiplier effects. One respondent also commented that it appears that ISNAR tends to work with individual institutions (NAROs), not NARS as a whole. Another interviewee noted that it tends to work only with government institutions, not with the rest of NARS, such as NGOs, and fails to involve the private sector, for instance, in an ISNAR advisory committee. One respondent suggested that ISNAR should work more with NARS' clients. Another said that ISNAR's involvement in components of NARS is not necessarily effective unless it also looks at the whole.

Much of the criticism, however, was qualified by factors such as ISNAR's dependence on the willingness and motivation of partner governments and institutions, or ISNAR's resources and capacity for extended assistance. It was also suggested that mechanisms of cooperation might be found if given priority.

> *"ISNAR needs to do more on management of organizational change and organizational development techniques. They have done lots on economic techniques and some on management, such as INFORM, or on human resources, personnel, and accounting. Manuals and training courses are good, but understanding how institutions or research organizations can change from their original to the desired state requires more. It's one thing to describe the desired state, but you also need tools for how to bring about change."*

The issue of location headquarters and field presence came up in the context of ISNAR technical assistance services, among others. While four interviewees advocated for a developing country location for ISNAR for a variety of reasons—including that of being closer to the field—the other six who commented on field presence were concerned about the sufficient presence of ISNAR staff in general, independent of the location of its headquarters.

***Finding:** Overall, ISNAR's reputation for quality and impact is good but not uniformly excellent.*

Generally, respondents reported that ISNAR does not enjoy a reputation of uniformly excellent performance, ascribing it to factors such as perceived weaknesses (aspects of lack of vision or focus, etc.), and the difficulties of task, context, and limited resources. Consequently, in rating the reputation of the quality of ISNAR's work, respondents split almost exactly down the middle between "medium" and "high": half answered "high" or "medium-high" (both 25%) and the other half answered "medium" (one stakeholder, or 4.2%, responded "low-medium"). (See Exhibit 3.3.)

The reputation of the quality of ISNAR's impact was rated "medium" by 54%, and "high" or "medium-high" by 21% (see Exhibit 3.3). These stakeholders felt that ISNAR had made a difference for NARS and agricultural research in general. Overall in their survey response, half of the stakeholders commented on ISNAR's contributions to strengthening NARS and building their capacity in managing research and their organizations. Contributions to priority setting, in particular, were highlighted by one-fourth of the respondents. Half of the interviewees commented on ISNAR's contributions to agricultural research through its international and regional liaison work, and to raising awareness about the needs and context of NARS. One stakeholder expressed that ISNAR has made a difference in national agricultural research, but that there is still a long way to go.

Several stakeholders also raised questions about the scope of ISNAR's impact. Comments related to:

- ISNAR's effectiveness and the quality of its products and services
- the effort ISNAR makes to demonstrate impact
- factors in the context of ISNAR work which reduce the potential for impact, such as a lack of motivation or capacity of the counterpart
- ISNAR lacking the capacity to follow up and provide support to implement plans

Suggestions included the following:

- ISNAR should look at impact.
- ISNAR should consider different levels of impact, such as the clients of NARS or the international scene.
- ISNAR'S clients should judge impact.
- An assessment should be done based on performance indicators, rather than client satisfaction.

Five stakeholders (20.9%) did not rate the impact reputation; several because they felt they did not know enough to comment, others because they felt it was too early to say or it would be secondhand information. A number commented on the difficulty of assessing impact, particularly in ISNAR's work.

> *"The quality of ISNAR's work is relatively high—academically. However, there is a question mark about targeting and impact."*

> *"When you look at the effectiveness of NARS today in technology development, they have moved a long way from one or two decades ago. Part of the credit is due to ISNAR."*

Staffing and capacity

Finding: *ISNAR has a limited capacity to perform well and to satisfy demand, due both to its size and to the quality, composition, and expertise of its staff.*

More than half (14) of the respondents commented on staffing, linking it to different issues including niche, effectiveness of field interventions, leadership, and management. One-quarter of the respondents pointed out that the quality of ISNAR work can often be linked to the individual, be it in research or technical assistance. They mentioned, for instance, that certain researchers had left a gap when they parted with ISNAR. From the respondents' field experiences, they commended ISNAR staff for generally excellent work, but remarked that they had heard or seen that some staff did not seem to have the right mix of technical expertise, and interpersonal and diplomatic skills.

> *"ISNAR has a highly qualified staff. They are very good, but some people don't have the developing country experience necessary to understand the problems."*

Respondents generally considered the staffing to be of good quality, including some excellent individuals, but suggested that it could be higher. One individual discussed the quality of the staffing and available expertise in the context of the managerial challenge a small institute poses and/or the ability to attract high caliber staff with a limited budget. As staffing also relates to the question of niche and focus, four respondents indicated that, given strategic choices, ISNAR would have to review the profile of its current staff in terms of meeting the needs of its mandate—for example, to build research expertise in organizational management by hiring researchers from that field, as three stakeholders suggested.

A recurring subject in the survey was the high number of demands on, and requests for, ISNAR assistance. Those who mentioned this topic commended ISNAR for a quick turnaround time in responding to inquiries, and in providing information, pointers, or contacts. One interviewee also noted that ISNAR does not take on a job until it has identified the appropriate individual to do the work. Another highlighted the cooperation with local experts as positive and something they would like to see more often. Three others commented on hiring more local experts or strengthening local capacity to perform some of ISNAR's current activities, such as training.

4. Conclusions

Achievements

The stakeholders commended ISNAR's contributions to strengthening national agricultural research in developing countries, and voiced their approval for its advocacy and liaising roles between the national and the international systems. The survey indicates that ISNAR is well known to stakeholders and clients as a name; however, somewhat less known are the range of activities and services it undertakes, the manner in which it approaches them, and its results and impacts. ISNAR enjoys a good reputation, but not one of uniform excellence. The quality of its products and services is considered medium to high, and a number of improvements were suggested.

Impact

When asked about ISNAR's impacts, respondents tended to reiterate the achievements and contributions they had mentioned. Some, however, felt that it was too early to judge, or that

they did not have enough knowledge or firsthand information to comment. Several expressed doubts about ISNAR's effectiveness and impacts. In general, there appears to be a lack of hard evidence or information, and several stakeholders suggested that ISNAR examine impact.

Constraints

The constraints stakeholders identified can be categorized as internal and external to ISNAR, or within and outside the power of the institution. Statements regarding the need for a stronger vision, niche, and leadership fall into the first category. Under the second category of comments falls the priority given to research in general, both internationally and nationally, and agricultural research in particular.

Chapter Four – Agricultural Research Leaders' Views on ISNAR: Survey Results

J.E. Borges-Andrade[5]

1. Summary

This report describes an effort to assess ISNAR's impact on the institutional development of agricultural research organizations and systems on three continents. It is divided into three main sections: methodology, findings, and conclusions.

The framework for analyzing ISNAR's impact was based on two out of four categories used by Lusthaus, Anderson and Murphy (1995), who assert that institutional assessment encompasses collecting and analyzing information on four dimensions: the key forces in the organization's *external environment*, and the organizational *motivation*, *capacity*, and *performance*. A decision was made to focus the present assessment on changes in capacity and motivation alone, after some attempts to use all four dimensions showed that they were not suitable for the data collection procedures to be used.

For the purposes of the present study, ISNAR activities and outputs were classified for analytical purposes into 10 groups, which we refer to 10 agricultural research policy and management areas (see Methodology).

A survey methodology was used, conducted via fax and telephone interviews. Ultimately, 66 interviews in 48 countries were conducted in Africa, Latin America and the Caribbean, and Asia. Although ISNAR defines Sub-Saharan Africa and west Asia/north Africa as separate regions, this study did not allow for the inclusion of these areas.

Due to a sample bias in favor of Latin America and the Caribbean (the rate of response was greater than ISNAR's percentage of work in this region), the overall reported impacts may be underestimated. There is also a possible measurement error regarding ISNAR's services and outputs, due to the need to match information from two different sources for data processing purposes. On the other hand, there is much evidence supporting the validity of the data used in this study.

The most frequently cited ISNAR services and products were training, documents and publications, strategic planning, and consulting/advisory services. Strategic planning is named as the activity that has the most widespread effect on institutional development.

The most important contributions and impacts are related to "formulation and implementation of agricultural research policy," "strategic and long-term planning," "management information systems," and "international and local linkages and networks." These areas are usually rated as positive contributions. The quality of the contributions is evaluated more highly than the quantity.

[5] The author wishes to thank Leona Ba, Tricia Wind, Hilary Sime, Muthoni Mwangi, Say-Yin Tan, Amira Iskander, and Sarah Earl, from the International Development Research Centre, for help in the data collection in the English- and French-speaking countries of Asia, Africa, and the Caribbean; and Katia Puente Palacios, from the University of Brasília, for help in the data collection in the Spanish-speaking countries of Latin America.

A limitation of the present study is that impact has been measured through a well-founded subjective assessment, which attributes causal relationships to chains of activities. This means that the study might also be interpreted as an assessment of client satisfaction.

According to the results, ISNAR has made significant impacts in all 10 areas relating to the capacity and motivation of NARS and NAROs. An analysis of the indicators used in this study has revealed that it is not only factors attributable to ISNAR that explain impact. Region, for example, is also a variable affecting impact. In this evaluation, more impact has been experienced in Africa and less in Asia.

Most constraints and problems believed to restrict impact are related to features of the national organizations and systems, not ISNAR or CGIAR. The most frequently cited were lack of resources, undervalued research, and lack of qualified personnel. A further analysis of the data is suggested, testing other possible indicators of impact: size of institutions and countries receiving ISNAR contributions, their educational level, and economic health.

Respondents indicated that the major strategy for ISNAR to improve its performance and contribution in strengthening agricultural research would be to advocate attracting resources to the regions. In the near future, the priority areas for ISNAR's work should be "effective and efficient management of research programs," "strategic and long-term planning," and "human resource management."

2. Methodology

A sample of 100 agricultural research leaders in developing countries was compiled from lists of participants at recent CGIAR events (e.g. regional fora): 60 in Africa, 20 in Latin America and the Caribbean, and 20 in Asia. These numbers approximate the proportion of ISNAR services provided to those regions. Ultimately, 66 interviews were conducted: 46% in Africa, 32% in LAC, and 22% in Asia (see Annex 4.3).

Ten agricultural research policy and management areas were defined to guide data collection and analysis:

1. Formulation and implementation of agricultural research policy
2. Strategic and long-term planning
3. Organizational structure and governance mechanisms
4. Management of research programs
5. Management information systems
6. Management and dissemination of information
7. Human resource management
8. Financial management and accountability
9. International and local linkages and networks
10. Organizational culture, staff commitment, and loyalty

These 10 areas are elaborated in Annex 4.1.

A questionnaire was developed for the telephone interviews based on these policy and management areas. English, French, and Spanish versions were prepared; the English-language questionnaire is presented in Annex 4.2.

All institutions chosen for participation were contacted via fax, requesting their collaboration and the designation of an interviewee. The entire questionnaire was faxed, along with a cover

letter which provided specific instructions and definitions of the 10 policy and management areas (provided in English, French, or Spanish).

Telephone interviews occurred during August and September of 1996. IDRC regional office personnel conducted the interviews in the English- and French-speaking countries (Africa, Asia, and parts of the Caribbean) and a research assistant from the Social and Organizational Psychology Laboratory at the University of Brasília conducted interviews for the Spanish- and Portuguese-speaking participants in Latin America and the Caribbean. During the interviews, frequent reference was made to the questionnaire, which the interviewee was intended to have on hand. In case of doubt, questions and scales would be re-read over the phone by the interviewer.

Interview returns were highest in LAC and lowest in Africa; this result is not representative of ISNAR's distribution of services. The organization's efforts in Africa are greater than the percentage of responses, thus the present overall impact findings may be underestimated. This low rate of return has not allowed separate analyses for WANA and SSA, which would result in too-few cases per region.

The quantitative and qualitative data accumulated from the surveys, as well as information organized by ISNAR on its services and outputs for the same countries, were recorded and processed using SPSS for Windows.[6] Procedures for data analysis included the categorical evaluation of qualitative data, descriptive statistics, Pearson's correlation[7] and one-way analysis of variance (ANOVAs).[8] The results are summarized and discussed in the following section.[9]

3. Findings

ISNAR products/outputs

The number of ISNAR documents produced in 1991–1995 and the total number of training days provided in 1994–1995 are shown in Exhibit 4.1. The number of countries listed does not match the number in the sample, as these data come from different sources. Using training days to represent training activities is, of course, a limitation, since those activities typically involve needs assessment, instructional planning, instructional materials development, teaching, training evaluation, follow-up and, sometimes, additional advisory services.

Most documents were produced in the areas of "formulation and implementation of agricultural research policy" and "strategic and long-term planning." No documents were produced in the area of "financial management and accountability," and very few for

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[6] The author wishes to thank Maria do Carmo Martins, a professor from the Federal University of Uberlandia, and his doctoral student at the University of Brasília, for their help in data analysis.

[7] Pearson's correlation coefficient is a measure of linear association between variables.

[8] The One-Way ANOVA procedure produces a one-way analysis of variance for a quantitative dependent variable by a single factor (independent) variable, according to the SPSS for Windows program. Analysis of variance is used to test the hypothesis that several means are equal. This technique is an extension of the two-sample t-test.

[9] When units of analysis from the information sources were incompatible (absence of certain values), the questionnaire's units had to be adjusted (by the use of means) to match the data from ISNAR. This may have introduced some measurement of error, which could lead to a reduction in reliability. ISNAR was only able to provide information on training days for a period of two years and on documents produced, by area and overall, for five years. No information was available for advisory services. Therefore, independent indicators of ISNAR outputs and services are reduced here to publications and partially to training, which is one of the limitations of the study.

"organizational structure and governance mechanisms" and "organizational culture, staff commitment, and loyalty." A significant number of documents related to more than one area.

The number of training days is six times the total number of documents produced, even though training data were only available for less than half the period under study. The high levels of standard deviation show that these ISNAR outputs and services are far from being equally beneficial to the countries in the sample. This may indicate that ISNAR has concentrated its efforts on only some of the countries in the sample.

In the survey, respondents were asked to describe their organization's relationship with ISNAR, and the specific products and services provided. The activities, services, and products most frequently cited were training (57 times), documents and publications (25), strategic planning (21) and consulting/advisory services (17). Given the limitations concerning the information provided by ISNAR on its outputs and services, it would be difficult to make direct comparisons between ISNAR's list and responses provided by NARS'/NARO's leaders. However, to a great extent, these responses match the information furnished by ISNAR from its files.

Exhibit 4.1 ISNAR-produced documents over 5-year period (1991–1995) and training days over 2-year period (1994–1995)

Documents / training	Mean of docs. or training days	Std. Dev.	Min.	Max.	No. of countries
Documents related to 10 policy / management areas					
Formulation and implementation of agricultural research policy	1.21	2.46	0	12	43
Strategic and long-term planning	1.00	1.98	0	10	43
Organizational structure and governance mechanisms	0.07	0.26	0	1	43
Management of research programs	0.81	1.45	0	7	43
Management information systems	0.16	0.43	0	2	43
Management and dissemination of information	0.33	0.75	0	3	43
Human resource management	0.26	0.82	0	3	43
Financial management and accountability	0.00	0.00	0	0	43
International and local linkages and networks	0.67	1.43	0	7	43
Organizational culture, staff commitment, and loyalty	0.09	0.37	0	2	43
Documents related to multiple areas	0.88	0.96	0	3	43
Total number of documents	**5.56**	**6.43**	**1**	**36**	**43**
Training days (total)	**38.86**	**40.12**	**3**	**169**	**21**

Note: Data apply only to countries in final sample.
Source: ISNAR files

Contributions in 10 policy and management areas

Respondents were then asked to describe ISNAR's contributions to their organization in terms of each of the 10 policy and management areas. Exhibit 4.2 shows the most often-cited examples of specific ISNAR contributions.

The most frequently cited contributions related to "formulation and implementation of agriculture research policy," "strategic and long-term planning," and "management information systems." The least frequently cited concerned "financial management and accountability," followed by "organizational structure and governance mechanisms."

An interesting finding is that "management information systems" is one of the most frequently cited areas of ISNAR impact, while it is represented by relatively few documents. This could be interpreted to mean that the few publications on MIS have produced a relatively high rate of return. Another interesting result shown in Exhibit 4.2 is that a few specific activities (e.g. strategic planning) are seen as contributing to several different areas.

The respondents also rated each of the 10 policy and management areas, in terms of ISNAR's impact on them. See Exhibit 4.3 for descriptive statistics.

Exhibit 4.2 ISNAR specific contributions cited by respondents, by area

10 Key policy/management areas	No. of times cited	Most frequently cited specific contributions	No. of times cited
1. Formulation and implementation of agricultural research policy	86	Research planning Research priority setting	20 16
2. Strategic and long-term planning	47	Strategic planning Research priority setting	17 9
3. Organizational structure and governance mechanisms	22	Organizational restructuring Definition of roles, responsibilities, and policies	6 5
4. Management of research programs	31	Research planning Strategic planning methods	7 5
5. Management information systems	46	Implementing INFORM Publications and written reports	25 10
6. Management and dissemination of information	37	Publications Sending and updating information	18 9
7. Human resource management	37	Personnel training in the area Human resources development plan	18 13
8. Financial management and accountability	13	Strengthening financial management Consulting in financial management	11 2
9. International and local linkages and networks	33	Establishing links with similar institutions and producers Establishing regional networks	22 6
10. Organizational culture, staff commitment, and loyalty	32	Providing better regulation for the organization Strategic planning	10 8

Larger impacts are attributed to "strategic and long-term planning," "international and local linkages and networks," and "formulation and implementation of agriculture research policy." These results confirm the study's prior findings for the first and third areas and suggest an additional area of impact: "international and local linkages and networks." Smaller impacts have been reported by respondents for "financial management and accountability" and

"organizational culture, staff commitment, and loyalty. These results also match findings already reported in the present study.

Exhibit 4.3 ISNAR impact in 10 policy and management areas

Area	Impact mean	Std. Dev	Min.	Max.	n
Financial management and accountability	+0.40	0.57	0	+2	53
Organizational culture, staff commitment, and loyalty	+0.47	0.67	0	+2	53
Management and dissemination of information	+0.57	0.69	-1	+2	54
Organizational structure and governance mechanisms	+0.64	0.68	0	+2	55
Management information systems	+0.71	0.74	-1	+2	55
Human resource management	+0.85	0.91	-2	+2	59
Management of research programs	+0.86	0.74	0	+2	58
Formulation and implementation of agricultural research policy	+0.98	0.79	0	+2	61
International and local linkages and networks	+1.00	0.77	0	+2	58
Strategic and long-term planning	+1.05	0.73	0	+2	62

Note: –2=very negative impact; –1=negative; 0=no impact; +1=positive; +2=very positive impact. Results are shown in ascending order of mean impact score. n = number of responses. The original scale used for recording responses in the telephone interviews ranged from 1 (very negative impact) to 5 (very positive impact). In the present report, that scale has been transformed so that the numbers better represent their conceptual meanings: a range of negative and positive numbers representing negative and positive impacts, and zero representing no impact.

If ISNAR contributions cited by the NARS/NARO leaders were making any difference in their systems or organizations, one would expect that these area-specific impact ratings would differ between those who reported a contribution and those who did not. To test this hypothesis, means were compared using a one-way analysis of variance (ANOVA). Results have shown that, in all 10 areas, impacts are larger (significant at the .0005 level) in NARS/NAROs which reported a specific contribution made by ISNAR (see Exhibit 4.4). When specific contributions were reported, means were between +1 and +1.4 ("positive impact"). There were no negative impacts. Contributions in "formulation and implementation of agricultural research policy" and "strategic and long-term planning" were seen as having slightly greater effects. These results also confirm the evaluation's prior findings.

Overall impact on the performance of NARS/NAROs

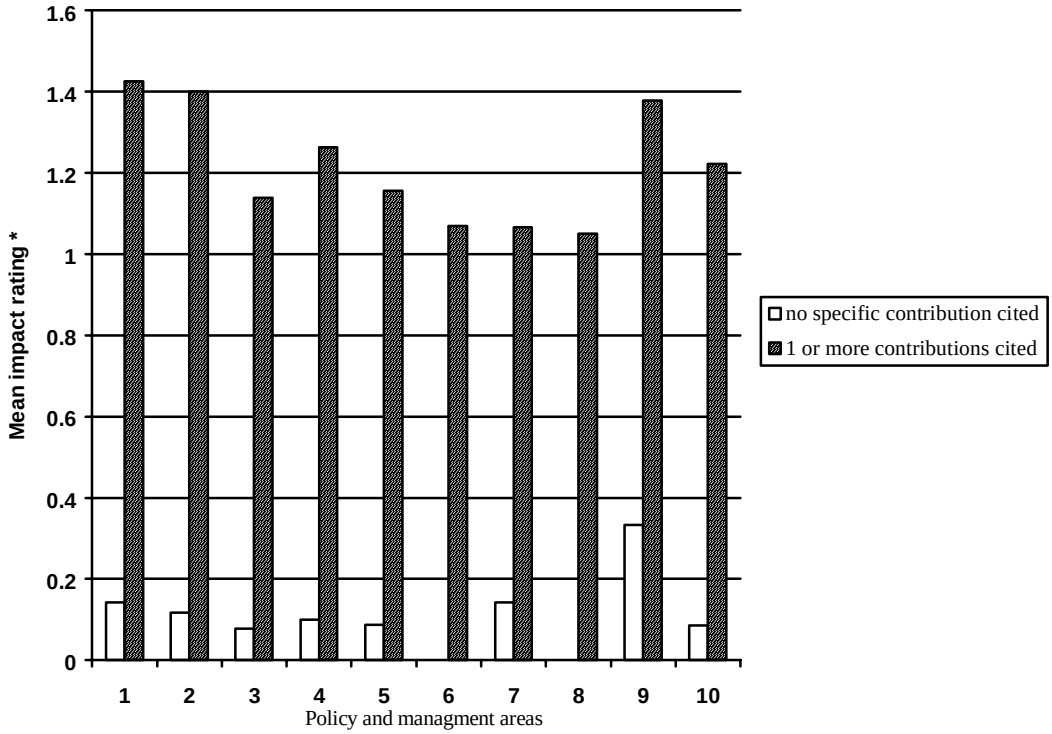
ISNAR's overall impact on the performance of NARS/NAROs, as assessed by respondents, resulted in a mean of +1.0 (Standard Deviation = 6.1).[10] Therefore, overall impact is seen as "positive," but not "very positive." No respondent assessed the overall impact as "negative" or "very negative."

In comparing ISNAR with other institutions that have contributed to strengthening their organization's capacity, respondents rate the quality of ISNAR's contributions as +0.43

[10] Using the transformed –2 to +2 scale (see Note in Exhibit 4.3).

(Standard Deviation = 1.03) and the quantity as –0.12 (Standard Deviation = 1.07).[11] Thus, in terms of quality, ISNAR'S impact is a little greater than other institutions' and, in terms of quantity, it is a little less.

Exhibit 4.4 Mean impact ratings in 10 areas, comparing NARS/NAROs which reported specific ISNAR contributions and those which did not



* –2=very negative impact; –1=negative; 0=no impact; +1=positive; +2=very positive impact.

1. Formulation and implementation of agricultural research policy
2. Strategic and long-term planning
3. Organizational structure and governance mechanisms
4. Management of research programs
5. Management information systems
6. Management and dissemination of information
7. Human resource management
8. Financial management and accountability
9. International and local linkages and networks
10. Organizational culture, staff commitment and loyalty

These ratings indicate that the NARS/NARO leaders are generally satisfied with ISNAR's performance, but that ISNAR has some competitors in the field. Comments made during the survey clearly suggest this.

To test for relationships between the level of impact indicated by the NARS/NARO leaders (overall rating, ratings by area, quality, and quantity of contributions) and the impact indicators obtained directly from ISNAR (total number of documents produced, number of

[11] Again, the units of measurement for "quality of contributions" and "quantity of contributions" ranged from 1 to 5 in the original scale, and were transformed in the present report to –2 ("much less than others") to +2 ("much greater than others"), with 0="same as others."

documents by area, and number of training days provided) Pearson correlation coefficients were calculated. No results were statistically significant at the 0.05 level.

Some value distributions for these variables were not totally adequate for a correlation analysis, which suggested employing a different measure of comparison. Therefore, a one-way ANOVA was used to establish the means of overall ratings, ratings by area, quantity, and quality of contributions. To perform this analysis, the data concerning the number of documents were classified into three categories (low, intermediate, and high) and training days into two categories (low and high). No means were found to be significantly different at the 0.05 level, thus confirming the findings from the Pearson correlation coefficients.

The absence of statistically significant relationships may suggest that—at least for those indicators of services and outputs[12]—it is not ISNAR's inputs alone that predict impact on the present sample organizations, but how these organizations respond to the inputs. This assertion will be confirmed in the following paragraphs.

Differences among regions

A one-way ANOVA was also conducted to test for significant differences among regions of the world (Africa, LAC, and Asia). Comparisons of means of impact ratings by area were made in terms of overall rating, quality, and quantity of contributions. Several differences were found to be significant at the 0.05 level and Duncan tests[13] were then calculated for these cases. Exhibit 4.5 graphically displays these differences.

ISNAR's impact on "formulation and implementation of agriculture research policy" was found to be significantly greater in Africa than in LAC or Asia. In terms of "strategic and long-term planning" and "organizational structure and governance mechanisms," Africa and LAC have benefited more than Asia. Africa also reports larger impacts on "management information systems," compared to LAC, and on "international and local linkages and networks," compared to Asia. ISNAR's impact on "organizational culture, staff commitment, and loyalty" has been greater in LAC than in Asia.

In five out of the six areas with significant differences, Africa experienced higher ISNAR impacts than Asia; in three of these areas, LAC was also higher than Asia. The least impact was found in Asia, in five out of the six areas. No statistically significant difference was found among the three regions for "effective and efficient management of research programs," "management and dissemination of scientific information," "human resource management," and "financial management and accountability."

In terms of the *quantity* of ISNAR contributions to strengthen the capacity of NARS/NAROs, it appears that the number is higher in Africa than in Asia and LAC (Exhibit 4.5). In terms of the *quality* of ISNAR contributions (compared to other organizations that have also contributed to strengthening capacity), the rating is higher in Africa and LAC than in Asia.

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[12] As noted in the Summary, measurement error (due to a sample bias in favor of Latin America) may have affected these indicators during data aggregation. Another possible source of error concerning the use of the ISNAR-provided data is that several activities and products were conducted or delivered too recently to produce an impact. Moreover, a long chain of events takes place between ISNAR activities and outputs and their institutional impacts, which could also influence impact..

[13] A range test, available in SPSS for Windows, used to identify homogenous subsets of means.

Exhibit 4.5 Mean impact ratings in 10 policy and management areas for Africa, Latin America & the Caribbean (LAC) and Asia

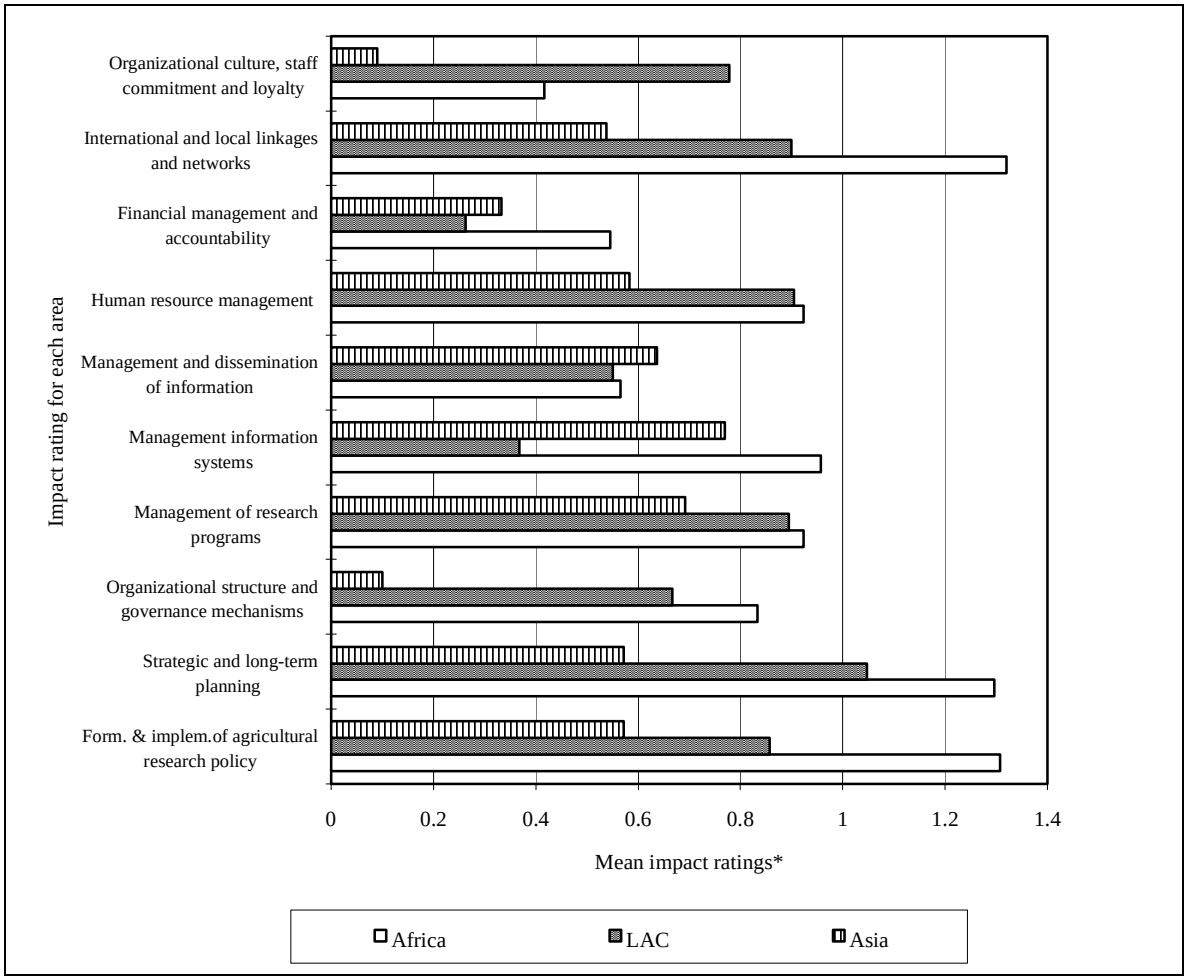
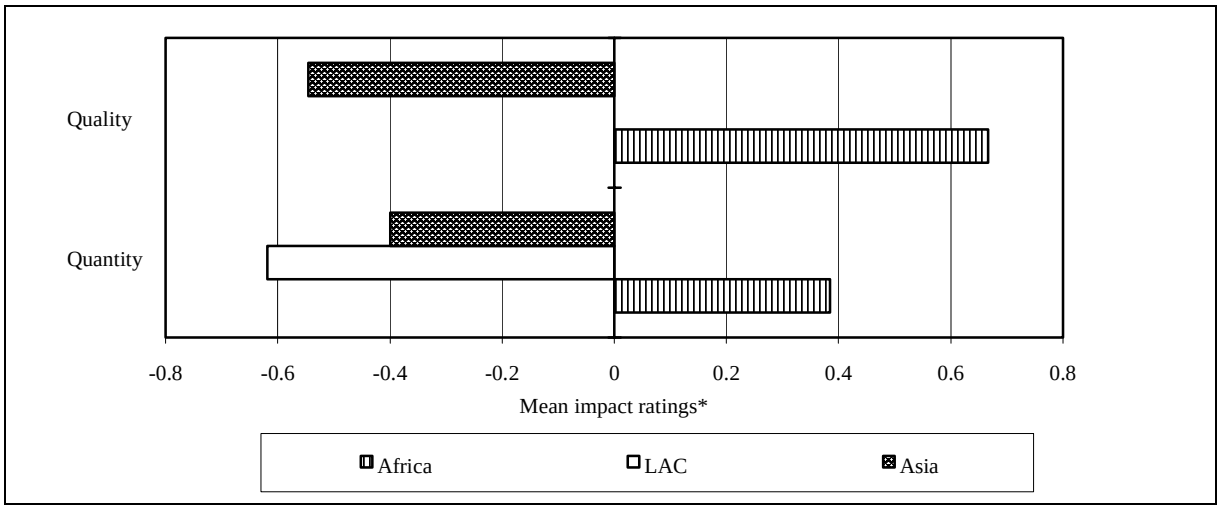


Exhibit 4.6 Mean ratings for relative quality and quantity of services provided



* –2=very negative impact; –1=negative; 0=no impact; +1=positive; +2=very positive impact.
Note: Mean rating for quality of services provided in LAC was 0.

Constraints to ISNAR'S work and impacts

The respondents were asked to think about the main constraints or problems their organizations face in obtaining and utilizing ISNAR products and services. Responses referred to four types of constraints and problems: 1) related to ISNAR; 2) related to CGIAR and other international agricultural research and development efforts; 3) related to the national agricultural research organization; and 4) related to their national agricultural research system. The most frequently cited constraints and problems are shown in Exhibit 4.6.

Exhibit 4.7 Main constraints or problems NARS/NAROs face in obtaining and utilizing ISNAR products and services

Related to:	No. of times cited	Most frequently cited constraints or problems:	No. of times cited
ISNAR	25	Funding restrictions	11
		Unavailability of experts	4
CGIAR and other international agricultural R&D efforts	21	Lack of resources	12
		Not taking into account NARS' needs	4
National agricultural research organization	66	Lack or reduction of resources	20
		Lack of qualified personnel	13
		Resistance to change	5
		Insufficient links with local organization and producers	5
National agricultural research system or broader constraints	82	Lack of resources	37
		Research is not valued	26
		Bureaucracy	4
		Lack of flexibility in the public sector	4

By a large margin, the NARS/NARO leaders indicated that the national agricultural research organizations and systems themselves pose the greatest constraints and problems. This evidence may be more surprising than it seems, considering that social psychology has long demonstrated that questionnaire and interviews respondents tend to attribute the causes of negative events to external actors. Given that ISNAR and CGIAR are more "external" to the respondents than their own NARS/NAROs, ISNAR and CGIAR might be expected to attract most of the blame. This is clearly not the case.

The most frequently cited specific constraint or problem–mentioned for all four types of constraints–is a lack of, or reduction in, resources. This is followed by the belief that research is not valued by the NARS or by a broader system. The third most common constraint is that NAROs lack qualified personnel.

Strategies for improving ISNAR's performance and contributions

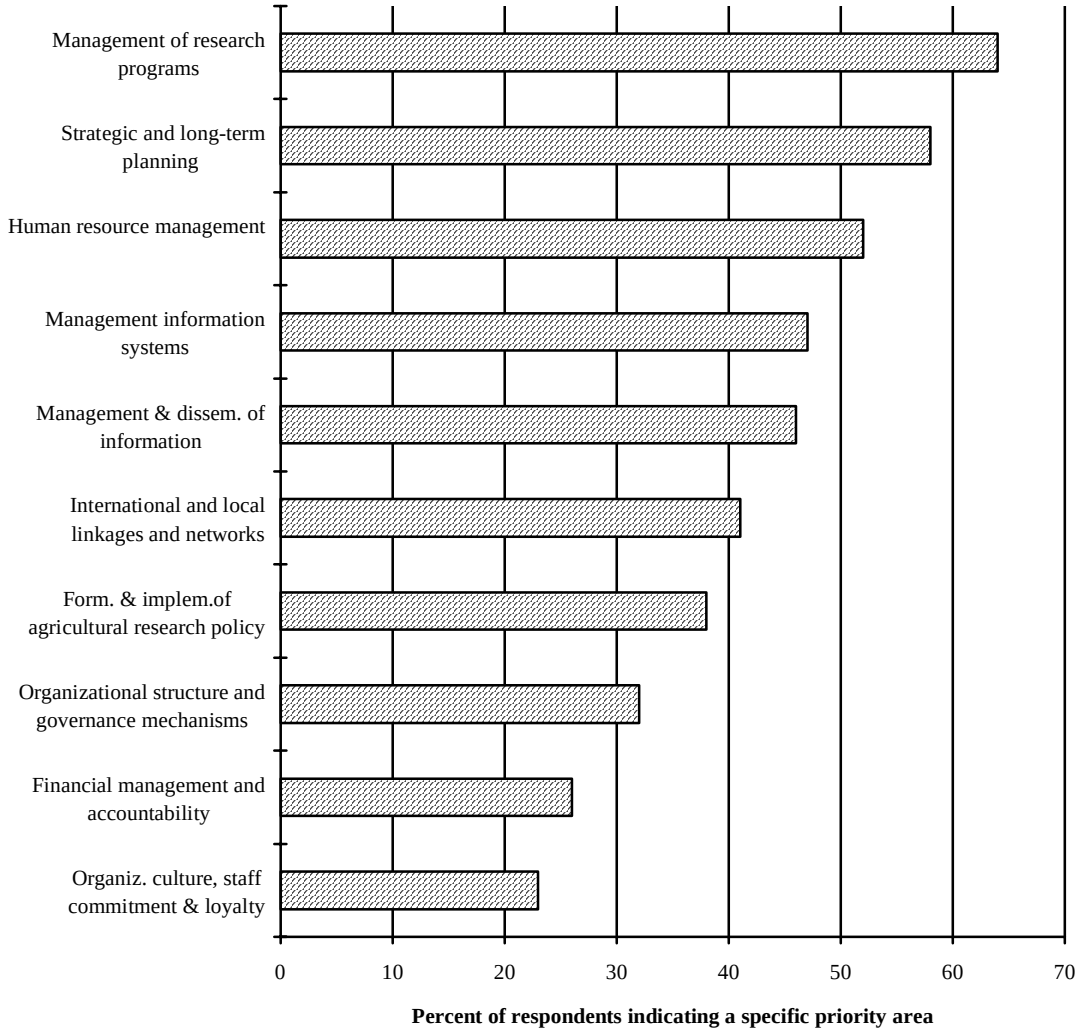
Several strategies were suggested for ISNAR to improve its performance and contribution to strengthening NARS/NAROs. The most frequently cited were (by number of citations):

- Support NARS in attracting funding and resource (11).
- Respond better to demands (7).
- Strengthen ISNAR itself (6).
- Increase number of ISNAR visits (5).
- Improve interaction among ISNAR staff members (4)
- Focus ISNAR's work (4).
- Maintain ISNAR's involvement (3).

Priority areas for strengthening agricultural research

Finally, the respondents were asked to indicate which of the 10 policy and management areas are currently priority areas where further work is needed for strengthening agricultural research in their countries (see Exhibit 4.7).

Exhibit 4.8 Priorities for further work to strengthen agricultural research



"Management of research programs" seems to be the first priority for the majority of NARS/NARO leaders, followed by "strategic and long-term planning," and then "human resource management." Less frequently indicated priorities are "organizational culture, staff commitment, and loyalty," "financial management and accountability," and "organizational structure and governance mechanisms."

Chapter Five – ISNAR's Impacts in Kenya: Case Study Results

S. Debela

1. Summary

This case study assesses ISNAR's achievements, impacts, and constraints in relation to strengthening the Kenyan national agricultural system. The assessment is based on the institutional assessment framework presented in Lusthaus, Anderson, and Murphy (1995). Following that framework, information was collected on four organizational dimensions: the key forces in the organization's external environment, organizational motivation, organizational capacity, and organizational performance.

The Kenyan national agricultural system is made up of various organizations that can be categorized as public, semi-public, academic, and private in status. Each has a board of management which operates under the jurisdiction of the appropriate ministry or parent organization. The public research organizations fall under the Ministry of Research, Technical Training, and Technology, which is the government policy organ for scientific research in Kenya. This same ministry is also responsible for research coordination among the various organizations. It should be noted, however, that research coordination is not only limited in Kenya at this time but, also, occurs mainly on voluntary basis.

The Kenya Agricultural Research Institute (KARI) is the main organization for agricultural research in Kenya. It was created in 1986 by amalgamating the former KARI (Muguga) with two research divisions in the former Ministry of Agriculture and Livestock Development (MOALD). It can be said that the Government of Kenya (GOK), as well as a large number of donors, have given and continue to give support to the establishment and strengthening of KARI as the primary organ of the Kenyan NARS. Since agricultural research has a long history in Kenya, KARI can be considered as having an institutional background and culture for conducting agricultural research.

Because of these factors, KARI has been able to develop the institutional capacity to improve its performance. To a large degree, KARI can be considered quite effective in meeting its multipurpose objectives. However, more effort is needed, both on the part of KARI and the GOK, to meet various efficiency and sustainability criteria.

ISNAR's involvement in strengthening the Kenyan NARS began in 1981 at the request of the GOK. The initial request was for a comprehensive diagnostic review of the NARS, which was followed by the development of a long-term strategic plan. The implementation of this strategic plan was accomplished through the so-called National Agricultural Research Projects (NARPs), which were financially and technically supported by the GOK and a large number of external donors. ISNAR's involvement during the period 1981–1986 can be considered as an institutional review and reorganization effort, since all endeavors during this period were aimed at creating a comprehensive research service, by rationalizing the previously existing disjointed and uncoordinated national set-up for agricultural research.

After the reorganization of KARI in 1986, the involvement of ISNAR continued at the request of the GOK, but the focus of attention shifted mainly to capacity building (although some element of reorganization continued until 1989). During this period, most collaborative programs focused on staff training, the introduction of more effective institution and resource

management systems, and research efforts aimed at priority setting for various commodities and factors included under KARI's mandate. It should, of course, be understood that the reorganization and capacity-building of KARI has been accomplished through the collaborative efforts of the GOK and a large number of donors, in addition to ISNAR, whose contributions should be considered as mainly technical, in the form of advisory and training services.

ISNAR's collaborative efforts with the Kenyan NARS can be considered both significant and useful. Among the main achievements are:

- diagnostic review of the national system
- development of a human resources plan
- development of a long-term strategic plan
- participation in the development of implementation plans
- the training of staff in various skills for raising their capacity for research
- introduction of various systems and processes for managing organizations and resources
- assisting in establishing schemes for a more effective linkages with technology users
- sensitizing government policymakers in the national system, as well as managers and scientists, to the requirements and constraints of building an effective and efficient national research system

While it is a matter of record to identify the list of achievements resulting from collaborations, it is quite difficult to put a finger on the impacts resulting from achievements. One of the possible means for identifying impact could be to assess which of the recommendations given—or the systems and processes introduced—are accepted and institutionalized within a system. The most notable consideration in the GOK/KARI/ISNAR collaboration is that most of the recommendations given as a result of the various (advisory) studies and/or training programs have been implemented either by the GOK and/or KARI (although there were time lags in the implementations). The fact that ISNAR's efforts have not only been recognized but also appreciated by most of the relevant bodies—be it the GOK or KARI, or other donors or KARI's clients/partners—testify to ISNAR's impact in strengthening KARI.

There were a number of constraints that hindered the impacts of the collaborative efforts. The most serious of these over the years can be associated with the shortage of funds, particularly for operations. This state of affairs places a major threat on KARI's sustainability as a national system, not to mention the problems it causes in the implementation of day-to-day activities.

Another constraint relates to ISNAR's position as an advisory body in the implementation of recommendations. Because the GOK/KARI are directly responsible for deciding upon the course of action they deem necessary, ISNAR's advisory role is limited to encouraging either or both of them to take action. Additional shortcomings are associated with ISNAR's own internal operations, including its inability and/or unwillingness to allocate more of its core funds in support of collaborative activities.

2. Acknowledgments

The author would like to express his gratitude to the management and staff of KARI for the assistance provided in carrying out this case study. Special thanks goes to Mrs. Lilian Kimani, Assistant Director/Training, and Mr. Hilary Ondanto of the Training Division for organizing the interviews and field visits undertaken during the fieldwork in Kenya. Appreciation also goes to Dr. Cyrus Ndiritu, Director of KARI, for allowing and facilitating the case study

activities. The willingness of all those individuals in Kenya who volunteered their time for the interviews is also greatly appreciated.

The support of ISNAR staff, particularly Doug Horton, Claudia Forero, and Helen Hambly Odame, in providing documents as well as in arranging the Kenyan visit is greatly appreciated. My thanks also goes to Bradford Mills for his assistance in helping identify the people to contact during the fieldwork in Kenya and, also, for providing documents to consult. Finally, I would like to thank all ISNAR staff that took the time to go over my first draft and made valuable comments and suggestion to improve its content and presentation.

3. Organization of the Case Study

This country case study was carried out during a three-week period between July 28 and August 16, 1996. The findings of the study are detailed in the following four substantive sections of this report.

Section four, "Methodology Used in the Study," addresses the assessment of the Kenyan NARS, particularly KARI, with the aim of indicating the contextual environment in which ISNAR was operating in Kenya from 1981 to the present. The need to focus exclusively on KARI was unavoidable, due to the fact that it is the main national organization for agricultural research with a broad mandate to deal with crops, livestock, and natural resources.

Section five, "Limitations of the Study," details the GOK/KARI/ISNAR collaborations, briefly describing the nature of each collaborative project and ISNAR's inputs into each, and indicating the outcomes. It should be noted that several of the collaborative projects are also supported by other external donors. Because the focus of this case study is on the outcomes of ISNAR/KARI collaborations, adequate recognition may not have been given to the contributions of the other donors involved in strengthening KARI.

Section six, "Description and Assessment of the Kenyan NARS," summarizes the achievements, impacts, and constraints of the collaborations. Finally, section seven, "Institutional Performance," presents conclusions, briefly indicating conditions for the successes achieved and, also, suggesting areas for ISNAR to examine to improve its performance in the future.

4. Methodology Used in the Study

The data and information required for this study were obtained from two main sources. The first source is personal interviews with knowledgeable people from various organizations based in Kenya, who have a working relationship with the Kenyan NARS, in general, and KARI, in particular. These included: government policymakers; officials of higher education institutions; representatives of external donor organizations which have supported or are still supporting KARI, of development organizations that collaborate with KARI in research programs of mutual interest, and of international agricultural research centers (both of CGIAR and non-CGIAR) based in Kenya; and, finally, some members of the management and staff of KARI itself. The list of organizations and individuals contacted is presented in Appendix 5.1.

The second source of information is publications that have relevance to the subject at hand. Most of the documents reviewed were obtained from ISNAR itself. However, additional materials obtained from KARI headquarters were also consulted. In addition to these two main sources, personal observations obtained during visits were also used to evaluate the infrastructural set-up at the headquarters and research centers of KARI.

The organization and presentation of the gathered data follows the framework for institutional assessment put forward by Lusthaus, Anderson, and Murphy (1995). This framework suggests that the performance of an organization is determined by its institutional motivation and capacity, both of which are conditioned by the external environment under which the organization is operating. Benefits to clients/stakeholders, resulting from improved institutional performance, are also significantly influenced by the external environment.

Based on the framework of Lusthaus, Anderson, and Murphy, a checklist was elaborated to gather information on an organization's environment, motivation, capacity, and performance. In the assessment of the Kenyan NARS, this checklist guided data collection and analysis to the greatest extent possible, particularly in respect to KARI. (The elements of the checklist are provided in Chapter 1, Exhibit 1.2.)

5. Limitations of the Study

The main constraint encountered during the fieldwork in Kenya was the unavailability of detailed data and information, in relation to the specific types and levels of resources for the implementation of projects aimed at strengthening the Kenyan NARS, contributed by the GOK, KARI, ISNAR, and other external donors. This is particularly true for the collaborative projects carried out between 1981–1986/87, although similar problems have been encountered for projects implemented in later years. Such documentation would have provided clear data with respect to objectives, plans of activities, and anticipated project duration, in addition to the levels and sources of resources allocated for each project.

The reasons given for this deficiency fall into two categories: 1) the relevant documentation was not located at KARI, since the present incarnation of KARI only came into existence in 1986 and much documentation has not yet been brought to the new archive; or 2) many collaborative project activities, especially those implemented during the early years, were initiated through regular letters of requests and agreements, with no formal memorandums of understanding. Because of these constraints, it is possible that some collaborative projects were not recorded or represented adequately in this case study.

6. Description and Assessment of the Kenyan NARS

NARS in Kenya: Origin and current set-up

Agricultural research in Kenya dates back to the early 1900s, when scientific research programs were established for some commodities/factors, in response to the needs of mostly commercial and export-oriented farmers. Although the first experiment stations/laboratories in Kenya were established between 1902 and 1927, the most extensive development of agricultural research stations took place in the 1950s and 1960s under what was then the Department of Agriculture.

During the same period, a number of regional research services, such as the East African Agricultural Research Organization (EAAFRO) and the East African Veterinary Research Organization (EAVRO), were established to tackle problems that were of common significance to the East African Community (EAC) countries, which comprised Kenya, Tanzania, and Uganda. With the break-up of the EAC in 1977, Kenya took over the facilities of the regional research centers that were established within its borders; as a result, Kenya had a large number of agricultural research stations/laboratories operating by the late 1970s. These stations fell under the jurisdiction of a variety of ministries and development boards/authorities, and they were operating in a non-coordinated manner, thus resulting in

unnecessary duplication of effort. Moreover, many of the research programs were driven by external donors that supported one program or another depending upon their individual interests.

Upon gaining independence in 1963, the Government of Kenya felt the need to rationalize and coordinate the national research infrastructure, and proceeded to establish mechanisms to do so. As a result, it decided by an act of parliament in 1977 (amended in 1979), to create a number of bodies to coordinate scientific research in the country: the National Council for Science and Technology (NCST), responsible for science policies and strategies; Advisory Research Committees, responsible for management and tactics; and statutory research institutes to take charge of actual research operations (ISNAR 1981).

Among the first steps taken by the NCST was to conduct a comprehensive review of the existing agricultural research set-up in the country, with the aim of reorganizing and rationalizing the whole system for more effective and efficient performance. A series of reviews was carried out between 1981 and 1985, resulting in various recommendations, most of which were acted upon by the government. Thus, at the time of this study (1996), the Kenyan NARS is composed of a large number of organizations with varying levels of agricultural research capacity, operating under the jurisdiction of various parent organizations (Ndiritu 1993; Roseboom and Pardey 1993).

Although each member of the Kenyan NARS operates under the general guidelines of its designated ministry, the overall institutional policy environment is determined by the Ministry of Research, Technical Training, and Technology (MRTTT); this is especially true for the public and semi-public research organizations. A generalized, if somewhat loose, framework for coordination among NARS members exists, guided by various national committees established and led by the NCST, which also serves as an advisor to the MRTTT on matters related to agricultural research. KARI, as the main NARS, has also established several mechanisms to facilitate collaboration among the national research services, including the national universities. The following mechanisms are currently in place:

NARS Fora. These are organized on a periodic basis to create opportunities for assembling relevant organizations and individuals to present research results, discuss policy issues, and brainstorm future directions.

Contract research. Some business organizations sign contract agreements with relevant research establishments and academic institutions for conducting research on their behalf. A good example of this is the contractual arrangement between KARI and the Kenya Breweries Ltd. on Barley Yellow Dwarf Virus studies.

Agricultural Research Fund. In 1990, KARI established a special fund to encourage scientists in various organizations to undertake research/studies that KARI considers of high national priority, but for which it does not have the time or capacity to carry out itself (KARI 1996a). Exhibit 5.1 shows the number of research proposals submitted to and approved by the fund committee to date.

Exhibit 5.1 Research proposals submitted to and approved by the ARF committee of KARI

	Proposals accepted for funding

Source of application	No. proposals received	No. proposals passed for peer reviews	Proposals accepted for funding: No.	Proposals accepted for funding: Total budget
University	114	55	23	31,104
KARI	28	11	6	2,873
NGO	24	11	2	3,026
Private sector company	1	1	1	1,697
Other public sector research institution	30	21	1	1,678
International research institutions	2	2	2	2,518
Total	**199**	**101**	**35**	**42,896**

Source: Beynon and Mbogoh (1996)

Note: Total budget is expressed in thousand Kenya Shillings (K.Sh. 1,000).

As the above description shows, the NARS in Kenya is composed of a large number of research services, each with its own mandate, resources, and management structures. Because of this state of affairs, IARC and other external donor organizations are obliged to deal with individual research institutes/organizations and universities, distinct from NARS, in an effort to strengthen the national agricultural research capacity. This is also the case with ISNAR's collaboration with NARS in Kenya; it therefore has established long-lasting relations with KARI, most likely because of KARI's position as the premier NARO of Kenya. For this reason, this case study on ISNAR's achievements, impacts, and constraints in terms of the Kenyan NARS is almost exclusively focused on KARI.

The external environment

The capacity and performance of any research service—or any other development, academic, or service organization—is greatly influenced by the external economic, political, social, and cultural environment within which it operates (TAC Secretariat 1996; Lusthaus, Anderson, and Murphy 1995). And, in most cases, a research service has only a very limited, if any, influence in determining the course of these events. KARI is no exception to this general rule. It is therefore necessary to give a brief description of KARI's external environment in assessing its development and performance.

The Kenyan economy is dominated by agriculture, which accounted for 28% of GDP, 70% of the rural workforce, and 60% of the country's export earnings in 1990 (KARI 1995). Over the last three decades, the GOK's agricultural development policy has given much attention to internal food self-sufficiency and the generation of surplus production, aimed at maximizing export earnings. Because of the shortage of agricultural land, increased agricultural production to meet future food, industrial, and other needs greatly depends on the use of improved technologies. This fact, understood by both the former colonial administration as well as the post-independence governments, has led to the establishment of and support for agricultural research in the country.

KARI, as a semi-public research organization, has its own board of management, composed of members from the relevant development ministries, institutions of higher learning, and user organizations. KARI's board is basically responsible for policy matters and has the task of reviewing and approving the institutional organizational structure; the organization's research priorities, plans and programs; staff schemes of service; and the annual research program and

budget. The director of KARI is an appointed official and is directly accountable to the board, which in turn is responsible to the Permanent Secretary of the MRTTT and, through him, to the GOK. The director is also the chief executive officer of KARI and is responsible for the day-to-day running of the organization.

The technological environment in Kenya, in terms of power and utility supplies, road transport networks, and the availability of modern machinery and equipment, can be considered adequate by the standards of most sub-Saharan African countries, although the quality and efficiency of such services vary from location to location. KARI, both at headquarters and center levels, has a reasonably well-developed technological infrastructure, which is needed to support the planning and execution of research projects, and the dissemination of useful results.

The political and economic environment can also be considered quite conducive for KARI, when compared to the situations in some of the neighboring countries, for example. The GOK has been continuously committed to supporting the research efforts of KARI through financial and other means, although KARI management feels that there are problems with respect to the level and timely disbursement of allocated funds.

Policymakers in the Ministry of Planning and Development, on the other hand, feel that the problem is not so much with the amount of funding allocated but, rather, with the way the allocated funds are utilized. The implication here is that KARI's management can and should rationalize the use of allocated funds by eliminating some exaggerated costs, such as those associated with personnel. Such approaches, however, have their own policy implications which KARI alone cannot decide. Besides the GOK, KARI also obtains funds from a large number of donors, including the World Bank, USAID, the former European Economic Commission, ODA, and the Government of the Netherlands, among others.

KARI has good working relationships with many of the IARCs, two of which (ILRI and ICRAF) actually maintain their headquarters in Nairobi. As indicated earlier, KARI has also created a number of cooperation/collaboration mechanisms with many of the national development organizations, higher education institutions, and the farming community.

Institutional capacity

KARI only began to assume its present organizational shape in 1986. This was achieved by amalgamating the Scientific Research Division and the Veterinary Research Division of the former Ministry of Agriculture and Livestock Development with the former KARI (Muguga) (Ndiritu 1990). At present, KARI is the largest agricultural research institute in Kenya. A brief description of the institute's organizational status follows.

Organizational structure

According to the existing organizational structure, KARI has a board of management, a director, and three research departments (crops, soil, and water management; livestock; and planning, finance, and administration), each headed by a deputy director. Each department has three research divisions, all headed by assistant directors. At the research center level, each center is headed by a director. A proposal was put forward in 1995 to reorganize the three departments into two, i.e. a department of research and a department of finance and administration. However, while it has been approved by the board, the proposal has yet to be endorsed by the GOK.

Research center network

Currently, there are 17 national research centers and seven regional research centers, with four of the national centers also doubling as regional entities. There are nine "sub-centers" operating under some of the regional centers (KARI 1995). These centers and sub-centers are distributed among the major soil and agroecological zones of the country.

Research programs

The national agricultural research strategy and plan for Kenya was drafted in 1985 on the basis of a comprehensive review of the country's agricultural situation (ISNAR 1985). This strategic plan was used in the development of KARI's long-term agricultural research priorities. Based on these priorities, the current research programs in KARI include the following commodities and factors (KARI 1991a):

- Crops research: covers a range of field, horticultural, and industrial crops as well as the related areas of agricultural botany, crop protection, and germplasm maintenance and multiplication.
- Soil/water management research: deals with soil and other land resource surveys and investigation, soil and water conservation, soil fertility and plant nutrition, irrigation and drainage, agricultural and water engineering.
- Livestock research: includes animal production, pasture and fodder, semi-arid and arid rangelands, and animal health.
- Socioeconomic research: Includes establishment of reliable baseline data for planning, program formulation, and technology evaluation.
- Other activities: These include activities in the areas of agricultural biotechnology and adaptive research, undertaken in relation to crops and livestock in some of the research centers.

Human resources

As of 1995, KARI has maintained a staff of 5,300, in the following proportion of categories (Cargill Technical Services, Inc. 1995):

Scientists	568	(11%)
Technical staff	1,817	(34%)
Auxiliary staff	2,915	(55%)

Of the scientific staff, 79 hold a Ph.D., while 344 hold an M.Sc. and 145 hold a B.Sc. degree. In addition, 112 staff members are under training for Ph.D. (65) and M.Sc. (47) degrees.

Financial resources

KARI's annual budget for 1995/96 was expected to be Kenya Pound 107.51 million; 23% of this figure is contributed by the GOK and the remaining 77% comes from external donors (KARI 1995). The largest portion (76%) of the GOK annual budget allocation is used for personnel expenditures, while the smaller amount is left for operating expenses.

Exhibit 5.2 shows KARI's annual budget for the period 1983/84 to 1992/93. It should be noted that the total research expenditures as a percentage of the yearly agricultural GDP (AGDP) ranged from a low of 0.7 in 1983/84 to a high of 2.1 in 1992/93. Exhibit 5.2 also shows that while GOK's contributions in terms of percentage of AGDP have remained more or less constant throughout the period, donor contributions have grown significantly, representing approximately two-thirds of the total by 1992/93.

KARI's recurrent expenditures for the years 1983/84 to 1992/93 are shown in Exhibit 5.3. It can be seen here that the average operating funds available per KARI scientist during this period was approximately Kenya Pound 4,800. This figure is notable when compared to the funds available per scientist at other institutions, e.g. Kenya Pound 76,000 at the Coffee Research Foundation and 32,550 at the Tea Research Foundation (Beynon and Mbogoh 1996).

Infrastructural resources

There has been much effort over the last 10 years to improve the infrastructural set-up of the institute, mostly through the support of external donors. At the present time, KARI is significantly endowed with modern buildings, office and laboratory equipment, as well as transport vehicles.

Exhibit 5.2 KARI research budget, in million Kenya Pounds (current prices)

Budget year	AGDP	Total research expend.	Total as % of AGDP	GOK contrib.	GOK as % AGDP	Donor contrib.	Donor as % AGDP
1983/84	997	7.346	0.7	6.948	0.7	0.398	0.0
1984/85	1,244	11.068	0.9	9.558	0.8	1.510	0.1
1985/86	1,357	12.266	0.9	10.870	0.8	1.392	0.1
1986/87	1,598	12.539	0.8	11,377	0.7	1.162	0.1
1987/88	1,699	20.039	1.2	11.778	0.7	8.261	0.5
1988/89	1,902	n/a*	n/a	n/a	n/a	n/a	n/a
1989/90	2,088	n/a	1.7	13.394	0.6	22.988	1.1
1990/91	2,235	n/a	n/a	n/a	n/a	n/a	n/a
1991/92	2,366	46.985	2.0	13.822	0.6	33,163	1.4
1992/93	2,468	51.936	2.1	17.476	0.7	34.460	1.4

* figures not available
Source: MOALD 1995

Program management

A regular process of research, program planning, implementation, and monitoring is in place within the KARI system, both at headquarters and center levels. Research projects are reviewed at the program, center, and national levels prior to approval for implementation. There is a procedure for the monitoring of implemented activities, however, the frequency and quality of such may be in need of closer follow-up by the relevant officers.

Exhibit 5.3 KARI's recurrent expenditures and operating costs per scientist, 1983–1993

Budget year	No. of scientists	Personnel	Training	Capital	Operating costs	Op. Costs per scientist
1983/84	552	3.998	0.058	n/a	1.327	2.4
1984/85	531	6.272	0.064	0.0116	1.819	3.4
1985/86	529	6.608	0.060	0.128	1.920	3.6
1986/87	547	7.031	0.096	0.196	2.481	4.5
1987/88	556	7.898	0.196	0.249	2.761	5.0
1989/90	567	9.881	0.010	0.239	2.765	4.9
1991/92	569	9.214	n/a	n/a	4.200	7.4
1992/93	572	13.032	n/a	n/a	4.200	7.3

Note: Recurrent expenditures on personnel, training, capital, and operating costs are shown in million Kenyan Shillings; operating costs per scientist are in thousand Kenyan Pounds.

Source: MOALD 1995

Inter-Institution linkages

KARI has initiated several mechanisms for improving linkages between itself and relevant organizations in the Kenyan NARS, as mentioned earlier. A linkage system has also been established between KARI researchers, the national extension system, and farmers. KARI's regional research centers are basically responsible for interfacing with the extension service and the farming community within their mandate areas. To facilitate these linkages, some staff in the regional centers are assigned as research–extension officers, with the purpose of linking closely with the liaison staff of the regional extension offices of the Ministry of Agriculture, Livestock Development and Marketing (MOALDM).

7. Institutional Performance

KARI's long-term mission, as set out in the documentation for its National Agricultural Research Project (NARP) Phase II, focuses on the following main areas of national concern (KARI 1995):

- conserving and improving the basic, natural resources of the country
- increasing the quantity and improving the quality of food and other farm products
- enabling farmers to produce adequate food supplies and other farm products, thereby raising the income base and quality of life in rural areas through improved farming technologies
- protecting crop and livestock resources from pests and other production hazards, and protecting consumers from health hazards that may arise through the use of pesticides and other agrochemicals
- developing a Kenyan capacity for generating and disseminating new knowledge and technology for the solution of present and future problems

The institutional assessment framework put forward by IDRC (Lusthaus, Anderson, and Murphy 1995) was used to assess KARI's performance over the years. The framework considers the following factors in evaluating performance: 1) activities that support the institutional mission (effectiveness); 2) the utilization of resources in the implementation of

planned activities (efficiency); and 3) the institution's tendency for long-term relevance to its stakeholders (sustainability).

Following are general statements that can be made with respect to KARI's performance in terms of the three performance criteria indicated above. These are based on a review of publications produced by KARI (i.e., KARI annual reports for the years 1990–1993), project reviews performed by selected external donors (i.e., USAID/MIAC and the European Union), and interviews with the staff of relevant organizations (see Annex 5.1).

Effectiveness

In general, it can be said that KARI has been quite effective in achieving its mission as set out in its research policy document. Some achievements include:

Experiments leading to improved technologies. In 1995, a total of 860 experiments on 60 commodities was being conducted in the various centers of KARI (ISNAR 1995). Some of these experiments were expected to result in useful technologies and management practices relevant to users. This, obviously, should not overshadow the fact that quite a wide range of improved technologies and management practices, mostly generated by KARI, are already employed by the farming community and other users. Examples of improved technologies that are reported to have been made available to users include: high yielding hybrids of maize, several varieties of wheat with good resistance/tolerance to prevalent diseases in the highlands of East Africa, improved varieties of cut flowers, and several clones of pyrethrum.

Significant number of published reports. Recent KARI annual reports (1990–1993) show a large number of publications by KARI scientists. Many of these research papers were presented at local or international seminars or conferences, while others were written for publication in peer-reviewed journals. Strong evidence of the latter is demonstrated by the number of scientific papers published in the 1996 edition of the *Eastern African Agricultural and Forestry Journal* (KARI 1996b).

Collaboration with other research organizations. KARI researchers have developed research collaboration links with their counterparts in various research organizations, particularly those based in Kenya. Examples of such collaboration can be found between scientists in KARI with their counterparts in ILRI and KETRI (livestock diseases), KEFRI and ICRAF (agroforestry), ICIPE (crop pest management), and Egerton University (marketing policies). KARI has also developed collaborative research programs with NARS of neighboring countries as well as with regional research associations such as ASARECA.

Healthy working relationships with donors. As already indicated, KARI has established very healthy working relationships with a significant number of donors that have been funding various components of KARI's research, management, and infrastructure development programs for many years, and are likely to continue doing so in the future.

Opportunities for staff training and networking. KARI has succeeded in creating opportunities for staff training, and for participation in local and international conferences through the financial support of external donors and, to a limited extent, GOK funding.

Efficiency

It is difficult to assess the efficiency of KARI, using the efficiency performance criteria described in the institutional assessment framework of IDRC, simply because the types of data and information required for such an evaluation are not readily available at this time.

One of the few assessments that can be determined in this regard concerns resources availability and utilization. As indicated earlier, three-quarters of KARI's annual budget originates from foreign sources. It should be understood that most of this funding is borrowed from financial institutions and has to be eventually paid back by the people and Government of Kenya. Therefore, technically speaking, the ratio between local and foreign sources of funding may not be as wide as might appear. Nonetheless, there is an obvious point to consider in this respect. Heavy reliance on external funding, even if it is expected to be repaid at a later date, creates the potential danger of establishing dependency. The continuity of donor-supported projects is always at risk because of the future uncertainty of relations.

Another available factor for assessment is the comparative organizational costs of KARI's operations. As can be seen in Exhibit 5.3, KARI's greatest operational cost relates to personnel expenses. Although the data is incomplete, it is clear that costs associated with training, capital, and operations account for a very small proportion of the annual budget during the indicated years.

Finally, it should be noted that operation costs per scientist (see also Exhibit 5.3) have registered more than a three-fold increase over the period 1983/84–1992/93. However, the increase is less dramatic beginning in 1986/87, which coincides with the reorganization and development of KARI as it now exists.

Relevance

There is no question that KARI's performance in terms of relevance is quite strong. Both NARP I and NARP II (KARI's agricultural research project proposals for 1986/87–1991/92 and 1992/93–1997/98, respectively) are quite on target in addressing the GOK's policy and plans for Kenya's agricultural development. This is confirmed by the fact that these proposals were approved for implementation by both the GOK and a large number of external donors.

Interviews with a representative cross section of KARI's stakeholders (see Annex 5.1 for list of persons contacted) also clearly indicated a high level of client satisfaction enjoyed by KARI at present. Within KARI itself, substantial management flexibility allows for the institution of changes required to make the organization more effective and relevant.

One must, of course, realize that there are still problems which need to be addressed over time. For example, a number of clients and donors feel that KARI has grown too large for its own good and that its programs are stretched too thinly. Also, some raise issues with the number and quality of KARI's technical and administrative manpower. But, overall, KARI continues to be quite relevant to the GOK, its clients, and stakeholders.

8. Assessment of KARI/ISNAR Collaborations

Collaborative projects and outputs

ISNAR's association with the Kenyan NARS started in 1981, when the GOK asked ISNAR to provide assistance in carrying out a comprehensive review of the national agricultural set-up, with the aim of recommending ways and means for reorganizing and financing the NARS. The resulting collaboration between ISNAR and the Kenyan NARS can be viewed from two time perspectives: the period 1981–1990, and the period 1990–present. Although there is really no distinct break in collaborations during the entire period, it is, nevertheless, possible to discern a general shift of emphasis in the collaboration objectives during the two phases.

The general objective of the earlier period can be categorized as dealing with the review and reorganization of the NARS in general, while the second time period can be said to be more

focused on building the capacity of the reorganized national agricultural research service (KARI), as distinct from the NARS. A summary of the various ISNAR/KARI activities carried out during these time frames is found below. It should be emphasized that more collaborative projects may have been conducted than those listed here; the reason for the possible omission is the unavailability of written documents which provide the necessary details.

Review of the Kenyan NARS (1981)

At the request of the Kenyan NCST on behalf of the GOK, a five-man ISNAR team of staff and consultants visited Kenya for about four weeks in 1981. The objective of the visit was to conduct a comprehensive diagnostic review of the Kenyan NARS, with the aim of identifying the strengths and weaknesses of the system, and formulating recommendations on ways and means to improve it.

This intensive activity, carried out in collaboration with staff from what was then MOALD, resulted in the publication of a set of recommendations for consideration by the GOK. The recommendations included, among others, the creation of a comprehensive, semi-autonomous NARO (ISNAR 1981).

Although most of the recommendations were accepted by the GOK, they were not acted upon immediately. Nonetheless, this diagnostic review became the basis for the reorganization of the NARS and the creation of a reorganized KARI in later years.

Manpower development and training plan (1982)

This activity, undertaken at the request of and in collaboration with the Kenyan NCST of the GOK, followed up one of the recommendations from the diagnostic review conducted in 1981. The main objective of this effort was to analyze the manpower requirements of the Kenyan NARS and develop a short-term training plan to meet the identified requirements. The study was conducted by a joint team of experts from ISNAR (one staff and two consultants) and the GOK.

The result of this effort was the development of a training plan for a period of five years (1983–1987), which formed a basis for the training of scientists for the NARS (NCST/ISNAR 1982).

Strengthening NARS – University of Nairobi linkage (1983)

As a result of the manpower development and training plan developed in 1982, ISNAR was requested to participate in a study determining how the University of Nairobi might improve its postgraduate capacity to strengthen the national agricultural research capability. The resulting report was used as a basis in the preparation of a project for strengthening the university, both in terms of postgraduate training and in participating in national agricultural research activities (Taylor 1990).

Development of a national agricultural research strategy and plan (1984/1985)

This major exercise, undertaken at the request of the GOK, was aimed at reviewing the management, organization, and programs of agricultural research in Kenya. In effect, this was a follow-up to the 1981 diagnostic review of the Kenyan research system, and was intended to develop a comprehensive, medium-term strategic plan for the NARS. This extensive effort involved a large number of agricultural experts, including 2 ISNAR staff and 10 ISNAR consultants, for a period extending over two months in 1985.

The output was a report to the GOK in the form of a two-volume document: the first part dealt with organization and structure, and the second covered the areas of research priorities and programs (ISNAR 1985). The review and recommendations contained in this report formed the basis for reorganizing the NARS and creating KARI as it now exists. They were also used as a basis for the preparation of what came to be known as NARP I, which was financed by a large number of external donors, as well as the GOK, and executed by the newly reorganized KARI.

Formulation of the NARP – Phase I (1986)

Initiated and led by the then-MOALD of the GOK, the goal of this extensive endeavor was to formulate an agricultural research plan to be implemented by the newly reorganized KARI over a five-year period (1986/87–1991/92). This activity was carried out by a national task force, with the significant input of experts from ISNAR and the World Bank.

The output from this exercise is a project document that contains specific details on the organization and management of KARI, the locations and activities of its agricultural research network, the development of the research infrastructure in KARI, and the amount and sources of funding for those activities detailed (MOALD 1986).

Collaboration in the implementation of NARP I (1986/1987–1990)

It should be noted that the time period, in which the implementation of NARP I occurred, coincided with the development of the reorganized KARI. Therefore, ISNAR's contributions during this period must be considered as very crucial. Services provided by ISNAR at this time related to advisory and training activities through individual visits, and organizing workshops on timely topics (Taylor 1990). Although details on the types and frequency of ISNAR services are not available, it can be assumed that they dealt with the following areas:

- enhancing the agricultural research policy environment
- improving the structure and organization of KARI
- enhancing the development and management of research programs, including identification and prioritization of commodities/factors for research
- improving human resources development, including identification of manpower requirements, and development of training plans and schemes of service
- improving financial management, focusing on improving the supply of funds from various sources as well as introducing a better system of management
- rationalizing the research center network, both in terms of number and mandates for centers
- developing an efficient scheme for linking research and extension services

A mid-term review of the implementation of NARP I, carried out by a joint GOK/donor team in June 1990, found that a substantial part of the initial NARP proposal was satisfactorily implemented, although there were severe problems that constrained the full implementation of the project as envisaged in the project document.

Agricultural Research Management Training Linkage Project (1990–1996)

This is the most important project during the second phase of collaboration between KARI and ISNAR. Initiated by KARI and ISNAR and supported financially by the European Union (EU), this wide-ranging project had the objective of "assisting KARI to develop and sustain its capacity to handle policy, organizational, and management problems, and eventually improve the performance needs or weaknesses that have been identified in the implementation of

NARP I" (Anandajayasekeram 1996). The project design included the following capacity-building activities, among others:

- workshops on planning, monitoring, and evaluation
- workshops on planning and priority setting
- review workshops on various research commodities/factors
- training courses on scientific writing and presentation
- theme workshops on management information systems (INFORM)
- workshops on strengthening linkages between researchers and technology users, using approaches which included Participatory Rural Appraisal (PRA) and Farming Systems Research (FSR)
- organizing policy and scientific conferences

The original project design planned for a total of 25 events on these topics; however, to date this number has been raised to 31. The project also included supporting the visitation of KARI staff to ISNAR and other relevant organizations, as well as their attendance at international conferences, to facilitate acquiring firsthand knowledge and experience.

At present (August 1996), all of the planned activities have been implemented, except one. The number of participants in the various workshops and conferences held to date totals 1,230 (Exhibit 5.4). Information was not available regarding the number of ISNAR staff that participated in these activities since the project's start, but it is known that at least 14 staff from ISNAR and 19 from other organizations have participated as resource persons since early 1994 (Anandajayasekeram 1996).

Exhibit 5.4 Workshops/conferences conducted under the Agricultural Research Management Training Linkage Project 1990–1996

Workshop/conference	No. of training events	No. of participants
Program planning & priority setting	3	90
Review of commodity/factor research	3	134
Participatory Rural Appraisal	1	13
Scientific writing and presentation	7	119
FSR and linkage with technology users	4	88
INFORM	3	97
Monitoring and evaluation	2	62
Human resources development	1	36
Data processing and management	1	14
Awareness and policy	5	577
Total	**30**	**1230**

Note**:** Neither the number of events nor the number of participants are final numbers for the project, as some courses are not completed yet.

Support for the identification of research priorities (1991)

This effort, conducted by KARI management and staff, was aimed at rationalizing the utilization of human and financial resources—which are considered in short supply—to address all the ongoing and proposed research programs and projects within KARI. The initial concept paper on the subject was prepared by KARI staff in 1990 and the full-blown exercise was completed by a KARI task force the following year. This exercise resulted in a document (popularly known as the "Blue Book") that indicates, in a quantitative fashion, KARI's commodity/factor research priorities up to the year 2000 (KARI 1991a).

ISNAR made two significant contributions to this effort. The first involved the assignment of two senior staff members to conduct a two-week workshop on the principles and methods of priority setting, which was instrumental in completing the task. Secondly, ISNAR developed and made available the quantitative method used in the priority setting exercise to the NARS of undeveloped countries, including KARI.

KARI/ISNAR/Rockefeller Foundation Research Project on Priority Setting (1994)

This tripartite project was initiated in 1994 and is planned to continue for at least another two years. The general objective of the project is to develop sustainable processes and methods for setting agricultural research priorities in KARI, and eventually in NARS of other African countries. The arrangement included the posting of ISNAR post-doctoral fellows in KARI to undertake collaborative research with KARI staff associated with a variety of commodity/factor research. To date, one fellow has been involved and a new post-doctoral fellow is scheduled to soon take up a post. Funding for this research project is provided by the Rockefeller Foundation.

The outputs to date from this research project can be separated into two categories: direct and indirect. Under the first type, a series of pilot commodity exercises were conducted to establish priorities for maize, sorghum, millet, and wheat. These activities are largely aimed at developing priority setting processes at the program level.

Under indirect outputs, the project provided KARI staff with assistance to undertake priority-setting exercises for other crops. At present, priority setting has been completed for cassava, fruits, vegetables, herbs and spices, floriculture, and tree crops, in addition to the commodities mentioned earlier. The establishment of priorities for rice, root and tuber crops, cotton, sugar cane, oil seeds, and soil fertility and plant nutrition are in various stages of completion, while work is yet to be started on grain legumes and pyrethrum (pers. comm. from B. Mills, ISNAR).

KARI/ISNAR/Humboldt University Berlin Project on Linking Adoption Studies and Priority Setting (1994–1996)

This project covered five aspects (modules) that influence agricultural development policies and their implications on setting agricultural research priorities, particularly in dairy research in Kenya. The five aspects are: 1) the policy context of agricultural research; 2) the impact of technology characteristics on technology adoption and diffusion; 3) the identification of user demand for technology; 4) the development of a decision support model for priority setting; and 5) the design of a participatory and transparent procedure for priority setting that integrates the results of the four preceding aspects. The five areas were selected from various research project proposals generated from an initial planning workshop on "Linking Adoption Studies and Priority Setting in Dairy Research," held in 1994 (Hitzel and Janssen 1995).

To date, a study on the policy context of agricultural research in relation to dairy has been completed and reported (Hitzel, Janssen, and Mbabu 1996). The study reviews past and present policies influencing dairy development in Kenya. The main subsector policies targeted in this part of the project focused on marketing, infrastructure, processing, input supply, and credit.

9. ISNAR Achievements, Impacts, and Constraints

Summary of achievements

As described above, ISNAR's collaboration with KARI has been going on for the last 15 years. During this period, ISNAR has employed all three modes of operations, i.e., advisory, training, and research, in a committed effort to overhaul and strengthen KARI as the main NARO in Kenya. In this endeavor, ISNAR has applied its typical approach of diagnosis, planning, and implementation.

The main achievements stemming from this long-term collaboration are summarized below:

Comprehensive diagnostic review of the national agricultural research set-up. This resulted in the identification and analysis of KARI's strengths and weaknesses, leading to recommendations for building a more organized and rationalized NARS.

Development of a strategy and implementation plan. The strategic (long-term) plan for the proposed NARO, i.e. KARI, covered such important issues as the national agricultural research policy; the organization and structure of the new KARI; long-term research programming, including priority setting; the development and management of resources (i.e., manpower, finance, and infrastructure); and schemes for improving institutional linkages. ISNAR also played a significant role in the formulation of the implementation (short-term) plan as a member of the task force that was charged with the responsibility of preparing the project implementation documents (i.e., NARP I and II).

Development of a manpower plan for the reorganized research service. This was a very important activity, since the existing technical manpower (i.e., scientists and technicians) not only lacked adequate qualifications, but the number of staff also fell below what was needed to meet the requirements of the envisaged national research service.

Development and implementation of the "Agricultural Research Management Linkage Project." This multipurpose project, which was conducted in collaboration with KARI staff and the EU as donor, was in many ways of great significance to strengthening KARI. It focused on introducing concepts and approaches, in program and institution development and management. These concepts and approaches were generally introduced through training workshops, and were followed through with actual implementation at all levels. The main contributions from this particular project to the overall achievement of KARI/ISNAR collaborations can be categorized as follows:

- Raising the technical skills of staff in various areas—staff were trained not only as practitioners but also as trainers, so that they would serve as "multipliers" of knowledge and skills to other colleagues in the national system.
- Setting up systems and processes for the improved management of research programs and resources—one of the main outcomes from these exercises was the establishment of a management information system (INFORM) for resources management, monitoring, and evaluation and, possibly, for program budgeting.
- Setting up a scheme for improved linkages with technology users—particularly farmers in the mandate areas of regional research centers.
- Sensitizing KARI scientists, GOK policymakers and KARI's clients/partners to KARI's programs, resources, and constraints.

Impacts from collaborations

As indicated in the Background section of this report, ISNAR's goal is to assist developing countries in bringing about sustained improvement in the performance of their NARS/NAROs (ISNAR 1992). However, the ultimate impact of ISNAR, to a large extent, rests on the willingness and ability of national governments and research systems/organizations, to synthesize and utilize the knowledge and skills introduced to them through ISNAR's advisory service, training, and research programs.

ISNAR's impact should be assessed in terms of its expectations for:

- the government's agricultural research policy and priorities
- the organization and management of KARI

- the identification, generation, and dissemination of technologies appropriate to the needs and priorities of KARI's clients

The question, then, is: To what degree have the concepts and approaches introduced through ISNAR's services been actually accepted and institutionalized both by the GOK and KARI? And, how have these impacts–if they exist–affected the ultimate beneficiaries through the utilization of KARI's technological products and processes?

This approach of assessing ISNAR impacts on GOK, KARI and, ultimately, the technology users is very much in line with the model proposed by Nielson (1989). According to the model, inputs in the research system should be expected to show positive outcomes at the system level initially, and at the beneficiary level (i.e., the technology user) ultimately. One should, however, note that institutional impact assessment at all levels is constrained by at least two important issues: 1) the time required to show impact (spatial constraint), and 2) the direct association of impact with a specific causal agent (attributive constraint).

It is understood that ISNAR alone could not bring about change in the managerial and technical capacity and performance of the Kenyan NARS, in general, and in KARI, in particular. There is no question that the positive improvements registered at KARI are the results of collaborative efforts by the GOK, KARI management and staff, and a number of external donors that contributed generously in terms of financial and technical assistance. Therefore, this attempt to assess ISNAR impact on KARI is aimed specifically at identifying the institutionalization of those concepts and methodologies that can be directly associated with the KARI/ISNAR projects which were described in the previous section.

Impact at GOK level

Originally, ISNAR's assistance was requested by the GOK to review the NARS and recommend ways and means of improving it. This was followed by other requests dealing with manpower planning, organization and structures, formulation of research programs, priority setting, etc. Three main conclusions can be drawn with respect to the GOK's acceptance and implementation of the various recommendations from the relevant studies undertaken by ISNAR.

First, although the GOK's policy on science and technology was developed and enacted into law before the involvement of ISNAR, its actual implementation only occurred after the various ISNAR reviews and resulting recommendations.

Second, implementation of the policy was instrumental in creating a reorganized KARI with a more efficient organization, structure, research programs, and priorities, as well as a leaner network of research centers and subcenters, all of which were recommendations from ISNAR's reviews.

Third, the annual budget allocated to KARI by the GOK and by donors increased more than four-fold from 1986/87 (the year of establishing the reorganized KARI) to 1992/93. This shows an increased confidence on the part of the GOK toward KARI, with respect to its performance in meeting GOK and donor expectations. Interviews with officials from government ministries (e.g. MRTTT, MOALDM, and the Ministry of Planning and Economic Development) and donor representatives (e.g. USAID) indicate that the continued involvement of ISNAR in assisting KARI has been a factor in raising the GOK's confidence in KARI, as well as in stabilizing and even enhancing KARI's positive image.

Impact at KARI Level

KARI has introduced into its routine operating system many concepts and approaches acquired through ISNAR training, advisory, and research services, as indicated below:

- A clearly defined institutional mission/goal was developed to guide KARI's institutional and research program development and management.
- An organizational structure was introduced, showing mandates and lines of communications among its components, i.e., headquarters, centers, and program coordinators.
- Commodity/factor priorities were defined, in a quantitative manner.
- KARI's research station network was streamlined, with clearly defined mandates on agroecology and commodity/factor for each.
- A management information system (INFORM) was introduced, both at headquarters and at most research centers. There is an ongoing effort to link INFORM with program planning, monitoring, and evaluation, as well as with program budgeting. However, the institutionalization of INFORM as a management tool by top- and middle-level managers in KARI has still some way to go.
- Research in socioeconomics has been institutionalized as a research program in its own right. This is linked with research in priority setting for various commodities and factors dealt with by KARI.
- Research priorities have been established for several commodities, and efforts are underway to establish further priorities for the remaining commodities and factors.
- Almost one-quarter of KARI scientists have been trained in scientific writing and presentation, a skill which is being put to use in preparing high-quality publications for local and international audiences.
- Scientists in the regional research centers are being trained in PRA methodologies, and in skills that enable them to link closely with farmers and extension workers in their mandate zones. These trained staff are already improving the research–extension–farmer linkage approaches previously in use.
- One of the outstanding contributions from the KARI/ISNAR collaborations is the training-of-trainers (TOT), aimed at enhancing KARI's capacity to train its own staff and that of its client/partner organizations.

Impact at beneficiary level

The immediate beneficiary of KARI/ISNAR collaborations is obviously KARI itself. Since KARI is at least one stage removed from the farming community which benefits from the institute's technological innovations, ISNAR is even further away from having an impact at the grassroots level. Moreover, the utilization of improved technologies by KARI's clients is influenced not only by the technologies' timely availability and affordability but, also, by the technology transfer system, which generally falls outside the mandate of KARI.

Also, the generation of improved technologies by KARI or any other research service is dependent upon the contributions of many forces, including the government, donors, collaborating partners, and the researchers themselves. As a result, it is quite difficult to directly associate the agricultural productivity of the farming community with ISNAR's efforts in strengthening the institutional capacity and performance of the technology-generating organ, i.e., KARI in this case.

KARI has benefited a great deal from its collaborations with ISNAR; this has been stated by KARI management and staff in personal interviews. However, two questions remain:

- How much of this benefit is transferred downstream from KARI?
- Are KARI's clients/partners aware of the collaboration and its positive outcomes?

In terms of awareness of ISNAR/KARI collaborations, all those interviewed during the fieldwork in Kenya say that they are knowledgeable of the collaborations and their general objectives. In fact, many of them have attended at least one of the meetings organized through the collaborative projects. For example, the Executive Officer of the Kenya National Farmers Union has attended such meetings, and has even visited ISNAR headquarters in The Hague and held discussions with the management.

Obviously, ISNAR has succeeded in making its presence felt by KARI's clients/partners through its participation in the various training programs and policy conferences. This should not be seen as an unnecessary and undesirable intervention on the part of ISNAR. In fact, some of those interviewed felt that ISNAR has played a very useful role as a stabilizing element in the institutional development of KARI, in addition to its major role of strengthening its institutional capacity.

Almost all the interviewees feel that KARI is a changed institution in terms of its approach in dealing with farmers' technological problems. They believe that there is more effort on the part of KARI to link closely with technology users at the grassroots level through such activities as planning workshops and training events. Thus, efforts at introducing and institutionalizing research–extension–farmer linkages, as well as PRA and FSR approaches, do seem to pay dividends, although the resources allocated for such activities at KARI are quite limited at this time. Despite this limitation, however, staff from the various centers that have been exposed to these approaches show enthusiasm and the desire to actually apply their newly acquired skills.

Constraints limiting achievements and impacts

The performance of both KARI and ISNAR, with respect to the collaborative projects described above, is reported to be constrained by many factors, some of which could be beyond the control of the organizations, while others could be more internal issues. Some of the more salient constraining factors are summarized below.

Because of its status as an advisory institution, ISNAR has no direct say in determining a course of action for the utilization of new concepts and approaches introduced through collaborative projects. Such decisions rest with the GOK or with KARI management. As a result, several of the introduced management schemes and technical skills have not been put into effective use so as to show impact. Some illustrative examples in this respect include: the application of INFORM, especially at research center levels; the utilization of PRA techniques in the diagnosis of farmers problems; and the utilization of trained staff as trainers for specialized skills such as priority setting.

There is a widely held feeling by KARI staff, and some of the external donors and international research centers based in Kenya, that the presence of an outposted ISNAR staff member, serving as a focal point, could have enhanced impacts. For example, the relative successes of institutionalizing socioeconomic research and implementing priority-setting projects are associated with the posting of ISNAR post-doctoral staff at KARI.

Most of ISNAR's capacity-building projects carried out with KARI are implemented using external donor funds. Some believe that ISNAR should use more of its core funds for such important projects. This suggests that ISNAR's effectiveness is constrained by inadequate funding, since it has to spend time securing funds from donors or it has to charge KARI for its services.

Other factors that constrained performance are expected to be within the control of either KARI or ISNAR, or both. Some important ones are:

- inadequate advance planning of training events, resulting in lack of good attendance or very rushed implementation
- short duration of training programs, particularly those for the training of trainers
- inadequate participatory approaches in training module development, especially in relation to choosing illustrative examples that reflect local experiences
- inadequate follow-up with respect to the application of newly acquired knowledge and skills (although a framework for such follow-up (PAPA) is initiated before training sessions are closed)
- some training has been too wide in scope and should have been better tailored to the needs of the participants in the research system (an example is the PRA approach which, some feel, is more applicable to rural development projects than to identifying farmer's specific technological constraints)

10. Conclusions

The long-term collaboration between KARI and ISNAR can be considered a success in many respects. The series of steps taken by all concerned—from the initial diagnostic review to the latest endeavors in capacity building—have been instrumental in strengthening Kenya's national capacity for agricultural research. The following factors can be associated with this success story :

- the GOK's realization of the need for change in the NARS and its willingness to commit the necessary efforts and resources to bring it about
- ISNAR's sustained commitment to assist the GOK's efforts through the collaborative development and implementation of the reorganization and capacity-building programs; it should be noted that ISNAR's efforts are given high marks by GOK policymakers, the management and staff of KARI, and participating donors; KARI staff who have participated in training events consider that:
  - The subjects selected for training purposes, in most cases, were appropriate and timely.
  - ISNAR staff and consultants participating in training were both competent and participatory in their approaches.
  - The organization and presentations of the various training events were good to a very large extent.
  - The training modules used for the training purposes were also rated good to a very large extent.
- the participation of many donors in a coordinated manner, so that efforts were channeled to attain a common goal (as opposed to previous experiences of unnecessary and mostly negative competitions to serve individual interests)

Obviously, determining how to effectively and efficiently use this improved national capacity in the future is the responsibility of the government. It is clear that, while the GOK has given commendable support to the reorganization and strengthening of the newly recreated research service, there are still areas where it needs to review some of its policies. In particular, these concern improved funding, the timely release of approved funds, and allowing KARI some latitude in personnel issues, such as the hiring and removing of staff at all levels, and introducing incentive-oriented conditions of service.

There are some lessons to be drawn and/or experiences to be confirmed from these KARI/ISNAR collaborative activities.

Success depends upon the goodwill and commitment of all parties involved in such collaborative activities. From this review, it is obvious that the Kenyan experience reached a happy state of development mainly because the GOK recognized the need for change, and was willing and committed to support implementation through political and financial means. The lesson here is that ISNAR may need to apply such criteria—if it does not do so already—as a condition for involvement in assisting NARS.

Building an effective and efficient national research service is generally a long-term process, requiring sustained effort and resources. The Kenyan case confirms this, as it has taken almost 15 years of continued contact to reach this stage.

The probability of success in institution building is greater if a more comprehensive, rather than piecemeal, approach is followed, although it may not be possible to introduce a wide array of ideas all at once. While the collaboration between KARI and ISNAR may be considered comprehensive, the development and implementation of projects were not initially designed in a unified and holistic manner. Projects were developed as needed during implementation. One is tempted to speculate, under these circumstances, whether time, resources, and effort may have been saved if comprehensive planning was accomplished at the start.

During field visits, complaints were raised by some KARI staff that they are equipped with knowledge and skills that cannot be effectively used under the existing situation of constrained resources. The implication is that the planning of training activities could have been more tailored to KARI's capacity for actual implementation. Certainly, there are pros and cons to this issue, but overall it points to the importance of assessing future prospects for implementation in designing capacity-building plans and programs.

As explained earlier, this case study focused exclusively on ISNAR's collaboration with KARI. However, interviews with staff of other research organizations (e.g. the directors of TRF and KIRIDI) indicated that similar collaborations with other components of the Kenyan NARS would have been desirable and useful in raising the overall capacity of the NARS. This is a legitimate suggestion; however, the implementation of such an approach would require a more efficient national coordination system among the components of the Kenyan NARS, to enable ISNAR to effectively utilize its limited resources for such activities. In any case, this is an issue ISNAR has to consider in future years.

Another significant point raised by some KARI senior staff and at least one donor (USAID) is that ISNAR needs to place even greater emphasis on monitoring the development of KARI, to enable it to align its assistance with the development dynamics of the institute. It may be recalled that ISNAR collaborations with the Kenyan NARS has been categorized into two phases: "review and reorganization" and "capacity building." The implication in the above suggestion is that a similar shift in assistance objectives may be required, since there is a feeling that KARI has reached a stage of development where requirements for ISNAR assistance are limited and selective. Certainly, ISNAR is advised to follow up this subject.

As indicated earlier, there are a number of international research centers, both within and outside the CGIAR system, operating in Kenya. Each of these centers have developed collaborative programs with KARI and other organizations in the Kenyan NARS, which are generally aimed at improving the capacity of the Kenyan research system. However, it is reported that there is only limited coordination/collaboration among these centers in their

dealings with the Kenyan NARS. A more coordinated approach on the part of the international centers would not only enhance impact, but would make life easier for the managers of the NARS. In fact, interviews with staff from some of the Kenya-based international research centers indicate that outposting an ISNAR staff member to one the CGIAR centers in Kenya for coordinating or facilitating activities of mutual interest would be welcome. It may be beneficial for ISNAR to follow up this suggestion, as it would be a cost-effective way to carry out its mandate with the Kenyan NARS.

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Chapter Six – ISNAR's Impacts in Morocco: Case Study Results

R. Mackay[14]

1. Summary

This study describes the methods and processes by which ISNAR has delivered its advisory services, research results, and training in Morocco, and the constraints within which ISNAR has operated there. Each of the activities ISNAR has engaged in with the National Institute for Agricultural Research (INRA) since 1983, and one activity involving the Division of Education Research and Development (DERD), are summarized. Hopefully this will provide insight into ISNAR's performance as an organization, as well as its achievements with and impacts on INRA, the principal public NARO in Morocco.

According to the findings, ISNAR has had, and continues to have, a substantial impact on INRA. This impact is evident, to varying degrees, in changes and improvements in the latter's environment, motivation, capacity, and performance.

The processes employed by ISNAR's professional staff are cited as sensitive to the environmental and cultural context of INRA and of Morocco, and believed to be appropriate to the limited financial and human resources of ISNAR.

However, ISNAR has also experienced various setbacks in Morocco. ISNAR and INRA have used these as learning experiences to maximize the advantages gained from subsequent activities.

2. Agricultural Research in Morocco

External environment

Morocco is a constitutional monarchy with a population of 27 million, evenly divided between urban and rural areas. Agriculture accounted for 16% of GDP in 1989. The contribution of agriculture to GDP has varied from year to year because of droughts, but there is no declining trend.

Morocco exports citrus fruit, tomatoes, processed vegetables, potatoes, olive oil, and legumes, and imports wheat, sugar, vegetable oil, seed potatoes, tea, dairy products, coffee, and lumber.

[14] I gratefully acknowledge the courtesy and cooperation extended to me by the Director of INRA, Dr. Arifi, and his senior and regional managers, researchers, and staff. I would particularly like to thank Mr. Ali Kissi, Inspector General, INRA, for arranging, promptly and without question, the meetings with the many the individuals I had requested to interview and for providing me with access to the documents I asked to review. I am indebted to him for the patience with which he accepted my constant requests for information and for his most welcome companionship during the various journeys we made together to several of INRA's regional centers.

Exhibit 6.1 illustrates the extent to which Morocco was able to meet its needs for basic agricultural commodities in a recent two-year period. The 1995 figures, particularly, the drastic reduction in cereal production, represent the effects of drought.

Exhibit 6.1 Needs met in basic agricultural products (%)

Product	1994	1995
Cereals	114	21
Oils	17	15
Sugar	61	51
Red meat	95	89
Poultry	100	100
Dairy products	81	85
Eggs	100	100

Source: INRA

Morocco's capacity in agricultural education, research, and development

Morocco has three institutions of higher education, 14 agricultural colleges, nine agricultural high schools, and 14 agricultural training centers. It maintains 122 extension centers attached to 40 provincial agricultural offices, and nine regional development offices with 170 subsidiary centers. There is one national federation of agriculture; 33 chambers of commerce; 2,124 independent cooperatives, with 161,571 members cultivating 1,209,552 hectares; 752 cooperatives working under a program of agricultural reform, with 24,762 producers managing 326,103 hectares; and 394 producer associations with 197,740 members.

Public agricultural research

The Moroccan NARS is summarized in Exhibit 6.2, listing the institutions and number of scientists, researchers, or teacher/researchers employed by each.

INRA is the principal agricultural research organization in Morocco's public sector and the largest and oldest NARO in the country, with a total of over 1,700 employees. It is also the only NARO in Morocco dedicated exclusively to agricultural research.

INRA was created under French colonial rule in the 1930s. Its bureaucratic legacy is evident in its formalized administrative structure, which tends to be highly centralized and governed by a detailed set of written rules and procedures. This legacy tends to project a climate where following rules is the primary concern, rather than producing results. These rules and procedures, which cover every aspect of INRA's organizational structure and operations, are intended to provide a clear blueprint for a large and complex institution. The disadvantage, however, is that even a single or relatively minor change at any one point in the structure inevitably causes changes in other parts of the organization. Furthermore, certain procedures may not be under the jurisdiction of INRA itself, but imposed according to INRA's place in the national civil service structure. Hence, institutional change—which is never easy in any organization—is made even more demanding here, since it may have to conform to existing rules, norms, and routines which exist at a broader, national level.

Exhibit 6.2 National (public sector) agricultural research system, Morocco

Institution	Category of personnel	Number
National Institute for Agricultural Research (INRA)	Scientific Technical Administrative	61 571 1087
Institute of Agriculture and Veterinary Medicine (IAV Hassan II)	Teacher/Researcher	331
National School of Agriculture at Meknes (ENAM)	Teacher/Researcher	94
National School of Forestry (ENFI)	Teacher/Researcher	23
National Center for Forestry Research (CNRF)	(not specified)	35
Experimental Service for Design and Standardization (SEEN)	(not specified)	14

Source: INRA

3. ISNAR's Collaboration with INRA

ISNAR has collaborated with INRA on numerous activities since 1983. This section contains a brief description of these interventions, with some of the processes being discussed in greater detail. (A list is also provided in Exhibit 6.3.) Understanding the projects is crucial to comprehending the ways in which the success of the activities have been achieved. Also, an attempt has been made in this section to explain the apparent lack of success of certain aspects of one of the most recent interventions—the Tripartite Project (1994–1996).

The descriptions follow a similar pattern. Each begins with a brief description of ISNAR's contribution, and continues by indicating the source of funds drawn upon, the outputs of the intervention confirmed by the author, any operational constraints under which the intervention was placed, and the impacts of the intervention on INRA's performance (including external environment, motivation, and capacity). Finally, the present state of progress of the intervention is described.

Exhibit 6.3 Summary of ISNAR–INRA activities

1983	Diagnostic review of INRA
1986	Program budgeting system (PBS #1)
1988	Program budgeting system (PBS #2)
1989	Program planning and priority setting
1989	Technical specifications for the acquisition of microcomputers
1990	Monitoring and evaluation
1991	Human resource management
1991	Linkages between researchers and users
1991	Joint ISNAR/INRA activities overseas
1992	Contributions to a study of the coordination of the Moroccan NARS
1994	ISNAR/INRA/GTZ Tripartite Project

Diagnostic review of INRA (1983)

INRA developed a 10-year master plan in 1981, with the function of defining the programs and research structures most suitable to resolving the recognized problems of the national agricultural development of Morocco. ISNAR was invited by the governing body of INRA to undertake a critical evaluation of the master plan's progress in 1983, and to make specific

suggestions to facilitate the attainment of its goals. Funds for the review came from the core budgets of ISNAR and INRA.

ISNAR's report, produced in cooperation with INRA's senior administration, constituted a comprehensive diagnostic review of INRA and its master plan. Recommendations fell into two broad categories. The first concerned raising the relevance of research to meet development needs; suggestions were made regarding the identification of research objectives and the conduct of research, including partnerships with other NAROs, i.e. the Institute of Agriculture and Veterinary (IAV Hassan II).

The second category of recommendations addressed the need to improve the management of INRA's human and physical resources. Proposals were made to prune the provincial network of research centers and experimental stations, undertake programming by objectives, enhance opportunities for the professional development of INRA's staff, improve working conditions to increase motivation and facilitate day-to-day operations, and simplify budgetary procedures.

Virtually every one of ISNAR's recommendations has been acted upon. Longer-term issues are still being dealt with—e.g. institutional organization and human resource development. For three years following the review, INRA carried out its activities—including the initiation of many of ISNAR's recommendations—without any assistance from ISNAR.

INRA incorporated its own goals and those suggested by ISNAR into a time frame that was suitable to its organizational capacity for change. The fact that INRA set the rate and magnitude of change itself—ensuring that the measures chosen would not overload its inherent capacity—is an important feature in the success enjoyed by both ISNAR and INRA in their first encounter. This success factor remained present in all ISNAR/INRA endeavors until 1984, when the Tripartite Project introduced a third party into the working arrangement, unwittingly and radically changing the balance of control, and thereby altering the relative success of the project (see details below).

There were no obvious factors which constrained the execution of this diagnostic review. However, in responding to INRA's invitation, ISNAR began a trend of working with only one NARO in the Moroccan NARS; over the years, it has become more strongly identified with INRA than with any of the other NAROs in the system.

In implementing ISNAR's recommendations, INRA has significantly changed its pre-1983 institutional capacity (e.g. it reduced the number of research stations to create a critical mass of scientific research skills in each), its institutional motivation (e.g. its mission has been streamlined to focus on the production of appropriate seed varieties as opposed to distribution), and institutional performance (e.g. it employs a more efficient use of its buildings and experimental farms, achieved mostly by reducing its properties). The effects of ISNAR's review continue to influence INRA today.

Program budgeting system (PBS #1 – 1986)

ISNAR worked with INRA personnel to develop and install a computerized, program budgeting system which would facilitate the financial and human resource management of INRA. A comprehensive financial management system was acquired and tested, and certain personnel trained in its use. ISNAR and INRA core budgets were used for these activities.

The system resulting from this project turned out to be unsuitable for wide or successful adoption by INRA. The organization's personnel were unable to appropriately manage the imported, inflexible system, and it appeared that the system could not be adapted to the requirements of INRA, which was moving toward greater decentralization. The desire for

decentralization was not shared equally among the managers based in Rabat and those in the research centers; this ambivalence interfered with the rate of progress and, probably, the general will to have the project succeed.

Nonetheless, INRA's capacity (resource allocation and management) was enhanced by this experience. INRA staff learned the disadvantages of employing a general software application that was created without INRA's specific situation being taken into account. By default, they learned to identify the characteristics of a program budgeting system that would be appropriate to INRA's needs. The staff were also sensitized to the internal conditions necessary for the successful adoption and integration of a program budgeting system in their operating procedures.

This first attempt to institutionalize a program budgeting system was superseded by PBS #2, described below.

Program budgeting system (PBS #2 – 1988)

ISNAR again worked with INRA personnel to create a program budgeting system appropriate to INRA's current and evolving needs. The core budgets of ISNAR and INRA provided the funds. The output was a locally designed, tailor-made, computer application to manage research programs, human resources, and budgets at both the central and regional levels of the organization. Substantial supporting documentation was also developed and written in-house to orient new users to the modules and training system.

In contrast to PBS #1, this second attempt was largely undertaken by INRA's own staff (with the collaboration of ISNAR) to serve the organization's own clearly determined purposes. The resulting modular software has been adopted throughout INRA by directors of the regional research centers and senior managers in Rabat, who have found the system to be a valuable tool in managing the research programs, personnel, and finances for which they are responsible.

Yet some center directors appear to have abandoned the use of PBS #2 as a management tool, despite its acknowledged value. This situation seems to stem from a general dissatisfaction regarding the allocation of INRA's limited research budget.

The current boycott of PBS #2 by some directors is a substantial threat to its continued and expanded use. The implications may be far-reaching, as it is not a simple matter to resume the use of a management system that has fallen into disuse; the re-adoption of a discontinued MIS can be as difficult as its original adoption. Continued, active promotion of PBS #2 is necessary for complete implementation.

Program planning and priority setting (1989)

One of ISNAR's recommendations in its 1983 review of INRA was to introduce the methodology of programming by objectives, to reflect a new clustering of applied research activities around commodity- and production-based research programs. The Chief of INRA's Programming Division therefore conducted a comprehensive review of programming strategies, confirmed that no suitable, ready-made approaches existed, and asked ISNAR for assistance in developing a participatory program planning method.

A management tool for the participatory program planning method was developed, tested, refined, and brought into general use over the following three years. The core budgets of ISNAR and INRA were used for this intervention.

The ISNAR/INRA method has since been adopted as the standard procedure for designing INRA's research programs. Since 1990, more than 12 of INRA's 18 research programs have been elaborated using this method. The remaining 6 are either underway or scheduled for elaboration.

A very significant output of this intervention was the publication of a research planning and priority-setting instrument, written in both French and English, and produced jointly by ISNAR and INRA, for use in NAROs in Morocco and elsewhere (Collion and Kissi 1994, 1995). In the process of developing this instrument, INRA became a leader in this field and the instrument was adopted for use by agricultural research organizations in other countries.

The success of this ISNAR/INRA activity has directly influenced ISNAR's way of operating, encouraging ISNAR to promote a "multiplier" approach to extending its services to client NARS. This approach involves transferring the expertise gained by original clients while collaborating on problem-solving activities to other NARS/NAROs to help resolve their problems (with appropriate adaptations). For example, ISNAR has a Memorandum of Understanding with INRA, whereby INRA managers work with ISNAR clients in other countries with similar requirements (e.g. Algeria, Burkina Faso, Benin, Kenya, Mali, Peru, Tunisia, and Senegal). (See "Joint ISNAR/INRA activities overseas" below.)

Initial constraints on the progress of this project included a lack of prior models and previous experience in this area. These were overcome by the assiduity with which the involved INRA and ISNAR officers pursued the challenge. Continuing constraints include the time and manpower required to create and manage the research program for each commodity or agroecological system. Incomplete understanding of the methodology by the Moroccan NAROs (other than INRA), and its subsequent use for managing research programs, may present an unexpected constraint.

The impacts of the development of this planning and priority-setting approach have been extensive. ISNAR has been able to focus its mission more precisely, clarifying system goals and giving them direction. INRA's capacity in program planning, management, and execution has been enhanced, as has its performance, evidenced by increased efficiency in resource use, increased relevance of research projects and, thereby, increased institutional sustainability. In addition, a number of publications have been based on this intervention (see References).

The current priority-setting and program planning tools are relatively firmly established and ongoing. However, they are potentially under threat unless their impacts on INRA's clients can be clearly demonstrated. INRA would do well to monitor and document, in collaboration with its clients, the outcomes and lessons learned as a result of the adoption of this planning tool.

Preparation of technical specifications for the acquisition of microcomputers (1989)

For the effective participation of regional research centers in implementing human resource development, project budgeting systems, and programming by objectives, the purchase of microcomputers became necessary. A World Bank loan facilitated the acquisition of the microcomputers and, as part of the open international bidding process for the tender, technical specifications had to be formulated. INRA requested ISNAR's collaboration in writing the specifications. Funding for this activity came from the core budgets of ISNAR and INRA.

Outputs included a written set of specifications to guide prospective suppliers, and a set of evaluation guidelines accompanied by an objective scoring system for bids received. The

specifications and scoring system were used for the purpose for which they were created. No constraints in the effective execution of this activity were noted.

The impacts on INRA included enhancement of the institution's capacity to manage technology and an increase in the efficiency of resource use. The project has been completed and the computers are in use.

Monitoring and evaluation (1990)

ISNAR was asked to provide INRA with three weeks of workshops/training in the monitoring and evaluation of research programs. The core budgets of ISNAR and INRA were used to produce workshop and training plans, but they were not implemented owing to a perceived discrepancy between what INRA saw as its needs, and the content of the plans. INRA, however, maintains an interest in exploring its monitoring and evaluation training needs. INRA originally requested a monitoring and evaluation module in the Tripartite Project (see below) but ISNAR's specialist in this area retired before concrete plans could be formulated.

Human resource management (1991)

ISNAR was asked to contribute to the planning of an internal personnel review process for INRA. With the client's participation, ISNAR worked extensively upon a review which would suit INRA and, at the same time, be compatible with the larger system within which INRA operated as a public institution. Again, the core budgets of ISNAR and INRA funded the activity.

Research tools, interview schedules, and questionnaires were prepared, and on-the-job training was provided to INRA staff for managing human resource development.

Although INRA accepted the plans for the review process in principle, they have not yet been formally introduced. In addition, a module on human resource development which was intended as a component of the Tripartite Project was suspended a few years later (see Tripartite Project below). Working in a government organization, INRA personnel and staff are subject to the current conditions of employment, remuneration, review, and reward which apply to government employees. Any new personnel review process cannot replace or take priority over the existing process; it cannot contradict the existing process, but must be implemented in addition to it. Hence, existing government regulations take priority over any procedures INRA wishes to employ.

As a result of this activity, INRA's has enhanced its capacity in personnel management and improved its awareness of the issues surrounding organizational structure, in particular, resource allocation and management. This activity is still at a "deliberation" stage for the reasons mentioned above.

Linkages between researchers and users (1991)

After being asked to provide advisory and training services in the transfer of technology, ISNAR held four weeks of workshops/training at the regional research center in Settat. Core budgets of ISNAR and INRA were used.

A working instrument to facilitate the transfer of appropriate research results to the potential users in the production sector was developed. The instrument was favorably received and adopted in appropriate situations.

INRA includes a research and development service, which functions as an intermediary between the research and extension functions in the NARS. However, the extension service is a separate organization and therefore INRA has no direct control over it.

The impacts of this endeavor on INRA included enhanced capacity for forging linkages and promoting their coordination; enhanced performance, in terms of effectiveness in moving toward their mission; and enhanced relevance and sustainability, evidenced by client satisfaction, key stakeholders' expectations being met, and an improved image and reputation.

The techniques developed as a result of this activity are being employed in appropriate situations. It should be noted, however, that the success and outputs of this mission were not explicitly recognized in a related module in the Tripartite Project (see below).

Joint ISNAR/INRA activities overseas (1992)

ISNAR has been able to capitalize on its excellent relationships with INRA senior officers and the expertise they have developed, by undertaking joint projects in a number of African countries in such areas as program planning and priority setting. ISNAR's core budget is used for these activities.

Publications relating to these joint professional undertakings have been made available by ISNAR; under a joint agreement, these documents carry both ISNAR's and INRA's institutional logos as an expression of their mutual efforts.

INRA's senior management has regarded these joint endeavors with considerable favor. The partnership activities are perceived as a vote of confidence in the expertise of INRA managers, and evidence of the validity and transferability of advisory, research, and training services undertaken within INRA.

One constraint in these activities is that appropriately experienced and qualified personnel from INRA are only available for limited periods, due to the nature of their responsibilities in their home institution. Therefore, the extent of this type of multiplier activity is inevitably limited.

The impacts associated with the motivation of INRA are substantial. The collaborative activities constitute an effective incentive/reward system, and result in peer recognition as well as remuneration. The capacity of INRA is enhanced in the area of leadership as well as in forging linkages with external institutions. Also, INRA's reputation at home, within ISNAR, and internationally (in the countries where the joint activities are undertaken), is enhanced.

Contributions to a study of the coordination of the Moroccan NARS (1992–)

In 1992, the initial request to examine ways in which the various Moroccan NAROs might work more closely together came from the Direction de l'Enseignement Agricole et de la Recherche (DEAR— Division of Agricultural Education and Research) , which today is known as the Direction de l'Enseignement, la Recherche et du Développement (DERD— Division of Education, Research and Development). ISNAR's contribution to the ongoing project has been to ensure the presence of a professional staff member at the meetings organized by DERD. The core budgets of ISNAR and the participating Moroccan NAROs are financing this activity.

A key workshop, dealing with the issues facing the coordination of a national system of agricultural research organizations, was organized by INRA and the Division de l'Information et de la Formation (DIF–Information and Training Division) in December 1994. As a result of the interest and discussion generated, INRA has slowly increased collaboration with other NAROs, in particular, IAV Hassan II.

In terms of constraints to this initiative, any attempt to study and plan the closer coordination of NAROs in Morocco inevitably involves a large number of players in both the public and private sectors. In his critical review of DERD, Husin Faraj, the former Director of INRA and current Director of the Conseil General du Développement Agricole (General Advisory Office for Agricultural Development), draws attention to the constraints represented by the variety of different organizations, public and private, which make up the Moroccan NARS (Faraj 1995).

Furthermore, many changes in the policies and structures of the participant organizations were taking place about the same time that the exploration of possible coordination of the NARS was being proposed. The result of this situation was that more attention was being paid to internal matters than to forging external links. Some of these changes included the following: 1) the Director of INRA was appointed to an advisory position with the Ministry of Agriculture and produced a new perspective on agricultural strategy for Morocco (published in December 1994); 2) a new Director of INRA was appointed; 3) the existing coordinating body, DEAR, was replaced by DERD; 4) the Secretary General of the IAV Hassan II was appointed Director of DERD; 5) at the request of the Ministère de l'Agriculture et de la Mise en Valeur Agricole, the Conseil General du Développement Agricole produced a critical management review of DERD (Faraj 1995) and made recommendations for change.

Also, the fact that ISNAR has been identified with INRA since 1983, rather than any other Moroccan NARO, might be construed by some as a constraint affecting ISNAR's neutrality in the initiative. That is to say, other players in the Moroccan NARS may perceive INRA as being favored. However, ISNAR's role is a reactive one and INRA has been the NARO that, to date, has actively sought ISNAR's services.

The attempts to forge closer links between the members of the Moroccan NARS have had a positive impact on INRA's institutional environment. INRA's level of interaction with NARO partners, particularly with the agricultural universities and the extension service, has been enriched. INRA's capacity to forge and coordinate linkages has also improved. The benefits enjoyed by the organization include increased relevance and, thereby, increased sustainability. INRA is also better adapted to its environment in the Moroccan system, and its image and reputation have been enhanced by taking an active role in forming partnerships within the NARS. Specifically, the formal workshop noted above may have resulted in INRA becoming more highly conscious of its potential role in helping to coordinate the Moroccan NARS and more willing to be proactive in this respect.

Although DERD has commissioned a number of academic studies, which were presented in workshops attended by representatives of the major players, it has not yet arrived at an operational plan for a unified NARS in Morocco. Two publications have also arisen from this overall initiative: Hoste et al. (1995) and DERD (1994).

ISNAR/INRA/GTZ Tripartite Project (1994)

The Tripartite Project, involving ISNAR, INRA, and the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), ran from July 1994 to July 1996. It was composed of five sub-projects or modules, which together represented the development of the 10 preceding ISNAR/INRA activities. Funding for the project was provided by INRA, ISNAR, and the GTZ. Exhibit 6.4 shows the five modules of the Tripartite Project and identifies the ISNAR and INRA participants. Each of the modules will be discussed briefly, followed by general commentary on the project.

Exhibit 6.4 Five modules of the Tripartite Project and key ISNAR/INRA participants

Module	Key ISNAR participant	Key INRA participants
1. Organizational structure	P. Perrault	A. Kissi; M. Lamsellek
2. Priority setting among research programs	W. Janssen	E. Zouttane; M. Balghiti
3. Financial management	H. Bruneau	El Aouni; M. Zeddaoui
4. Human resource management	C. Kramer	El Aouni; M. Hilali; M. Khessassi
5. Farmer involvement	H. Baur (also project coordinator)	M.M. Rahim; C. Kradi; E. Idrissi (Service Recherche-Développement); M. Oumeklou (DPA)

Sources of funds and in-kind contributions for Tripartite Project: ISNAR (DM 371,00); INRA (DM 371,600) and GTZ (DM 1,044,668).

Module #1. Organizational structure

To clarify the organizational structure within INRA and the relationships between the various units, a sound investigative methodology and instrumentation was developed. A structured interview schedule (which evolved into two questionnaires) was formulated to gather and confirm information about the issues causing administrative and organizational difficulties. As a result, a small number of INRA staff became experienced in the use of the methodology and instrumentation, and gained awareness of the numerous practical difficulties associated with initiating organizational change.

Before implementing this module, it was necessary to examine those issues identified as causing organizational problems in light of the official constitutional manuals of INRA. This task formed a constraint, as it was extremely detailed and time-consuming. Moreover, clarifying the structure of INRA inevitably involved questions of reorganization; such changes are never simple and thus can meet resistance, the reasons for which are not always apparent.

To date, the impacts of module #1 have been upon the institutional motivation of INRA. The very act of developing a methodology to identify problems was reported as having a motivational effect on the institutional culture of INRA; staff see that the administration is willing to address problems. INRA's capacity in human resource planning and management has also been enhanced.

Module #2. Priority setting among research programs

This endeavor resulted in the definition of an instrument and methodology for prioritizing INRA's research programs, both regionally and nationally. Also, a set of data on agricultural production by region was assembled, and an analysis of INRA's product and regional priorities was submitted to the Minister of Agriculture. The data set has provided information, allowing the priority-setting procedure to be employed with greater confidence.

Constraints upon the successful execution of this initiative were mainly methodological and technical. Participatory methodology can lead to overly optimistic expectations on the part of the participants; they may expect their perspectives or values to predominate in any given priority-setting exercise. Moreover, such a prioritization exercise must be carried out with absolute integrity, according to the principles and formulae which comprise the research tool.

Otherwise, the exercise can deteriorate into a self-protection exercise for those managers whose programs are likely to be assigned a low rank according to the selected measures.

Additionally, the results of such an exercise can disappoint certain researchers. For example, while INRA's date palm research program enjoyed a high profile and substantial success for several years, it scored low in terms of national priorities, thus disappointing researchers active in this area.

In terms of benefits, this initiative clarified and strengthened INRA's mission, bringing the organization's priorities in line with the national development policy, as reflected in the Ministry's "Platform for an Agricultural Strategy" (1994). In this way INRA'S mission gained greater recognition, promoting its relevance and sustainability. Linkages and coordination with higher-level government decision makers were also strengthened, giving INRA greater credibility.

The motivational dimension of the organization was also favorably impacted, in that use of the priority-setting tool continues to shape and give increasingly refined direction to its research programs. Furthermore, INRA's strategic leadership benefited, as program planning, management, and execution have been refined along with priority setting and strategic institutional planning.

The implications of the outcomes of this module for resource allocation are currently being reviewed.

Module #3. Financial management

A budget allocation module was piloted with some success in the Meknes regional research center, monitored by the chief of the Administrative Affairs Division. Previously, the disparity between the Moroccan government's financial year and the annual cycle of agricultural production in Morocco led to annual budget crises. The government has now altered its financial year to coincide with the agricultural production cycle.

In the process of developing the module, gaps in the procedures for the preparation of the annual INRA budget estimates were identified. These had to be addressed before the details of the budget allocation module could proceed.

INRA's technological environment has been enhanced by this module, as has its capacity for more robust governance and procurement of funds. With a sounder system for financial monitoring, INRA is able to more effectively allocate resources. Sound, two-way communication with government representatives on the financial needs of research have made INRA a stronger partner in the economic and social development of the country.

INRA is now in possession of a budget planning instrument and methodology that assists the Administrative Affairs Division in developing the annual budget in a rational and detailed manner.

Module #4. Human resource management

The implementation of this module was suspended. The head of the Administrative Affairs Division had just taken up his post when this endeavor was scheduled to begin, and he chose to direct his attention toward becoming familiar with the existing system rather than promoting immediate change. Moreover, certain groups of personnel showed a reluctance to adopt the planned performance evaluation procedures, because the procedures did not necessarily take into account the lack of financial and other resources that restricted an individual's performance.

Nonetheless, INRA's capacity has been enhanced as a result of work accomplished on this module. The individuals involved in it are able to talk in a more informed way about performance and change management, based on the technical expertise gained and the human problems encountered.

Module #5. Farmer involvement in the planning and evaluation of research

This initiative involved testing a methodology for involving small farmers, the extension service, and other stakeholders in planning and executing research, and transferring results to the producer. Guidelines are in draft form.

Constraints here include the fact that the ISNAR partner was appointed several months after the planned start date. A suitable methodology was arrived at only midway through the project. And, in general, involving producers in prioritizing research projects may set up expectations that cannot always be fulfilled.

This module seems to have somewhat impacted: institutional motivation (e.g. identification of the types of extension that are valued, enhanced attitudes about colleagues and clients, and peer recognition); capacity (e.g. enhanced collaborative linkages, enhanced collaboration between services and producers); and performance (e.g. service performance enhanced, efficiency in resource use increased, expectations of some key stakeholders were met). However, the approach is yet to be implemented on a wide scale.

A few publications have been associated with this activity, in particular those authored or co-authored by Baur in the bibliography of this chapter.

Commentary on Tripartite Project

Most theories of development identify the optimum sequence of events for a beneficiary as progressing from the initial use of external funds and expertise to the eventual use of the beneficiary's internal funds and expertise. With the successful acquisition of GTZ funds for the Tripartite Project, INRA, in effect, moved in the opposite direction.

After having enjoyed a non-directive and non-controlling relationship for some 11 years, INRA and ISNAR found themselves in a binding contractual relationship with a third party who exercised the right to determine the extent to which its funds were being used to drive the project, in terms of the exact sequence of activities, schedules, and deadlines. As stated earlier, this collaboration radically changed the balance of control and thereby altered the relative success of the Tripartite Project.

Over the years, ISNAR and INRA had fostered an effective relationship and procedures for working together. Each perceived the other as a partner in change and development, learning from one another at varying rates and assisting the other in the performance of their respective missions. INRA viewed this as a mutually-satisfying, long-term, implicit contract. The new contractual arrangement, on the other hand, appeared to give GTZ a unilateral right to audit the progress of the project, resulting in an unexpected imbalance in the notion of "partnership," as INRA has understood and practiced the concept since its first involvement with ISNAR in 1983.

In a mid-term evaluation of the project—the equivalent of an external audit—the GTZ blamed INRA for what it considered to be a lack of conformity to the plans as laid down in the original project logframe and timeline. By undertaking the evaluation in the way that it did, the GTZ was perceived by INRA to have stepped out of its role as a true "partner" in the project and to have assumed the role of bureaucratic donor, demanding accountability for its funds.

To INRA, this redefinition of the roles of the principal players was a violation of the terms of its implicit contract of partnership.

INRA saw itself as being no longer a full, autonomous partner in the process of development, but rather a mere recipient of GTZ funds. This implied to INRA that its director was expected to yield his right and responsibility to manage the organization's daily affairs, in favor of conforming to the constraints and timelines of a two-year project.

INRA was surprised by the mid-term evaluation's sudden apparent invasion of its organizational autonomy, and it was taken aback by the tone of the report, especially the fact that the blame for the lack of progress in certain modules was placed explicitly with INRA. There was little or no acknowledgment of the fact that, after the drafting of the Tripartite Project, INRA's senior management team underwent a standard, cyclical administrative change, bringing new participants to the project team. Furthermore, there was no mention of the fact that the project coordinator was working under significant handicaps: 1) he was hired and appointed some four months after the official project start date; 2) that, as an "external" appointment, he lacked the long experience of the ISNAR/INRA partnership; 3) only 50% of his time was devoted to the Tripartite Project and; 4) in addition to this coordination, he had specific, key responsibilities in one of the five project modules.

As the most recent formal project involving ISNAR and INRA, the experience of the Tripartite Project is most salient in the minds of INRA's managers. However, INRA must not disproportionately weigh the negative experience of this project against the relatively harmonious and clearly profitable relationship it has enjoyed with ISNAR since 1983. Both ISNAR and INRA have amply demonstrated their capacity to learn from adverse experiences, and they are already showing signs of having gained valuable experiences from this one and are moving forward in a strengthened partnership.

ISNAR, INRA, and continuous institutional development

Both ISNAR and INRA are conscious that institutional development does not occur instantaneously; certain aspects of institutional development may not even be capable of accommodating to the strict constraints of a project timeline. Time is required to allow what may appear to be simple ideas, to mature into a form capable of being integrated into a large and complex organization. Both ISNAR and INRA are aware that a delay on the part of INRA does not necessarily imply opposition to a recommended line of development.

ISNAR appears to have arrived at the optimum process for guaranteeing sustainable institutional development with INRA. In this process, ISNAR professional staff undertake a mission at the request and with the collaboration of INRA, and then withdraw while INRA's management weigh the pros and cons of the development suggestions.

This approach has had a profound influence on INRA's management capacity and performance. It may be counterproductive to attempt to re-cast it as a multiple project format, with milestones and objectives constrained by dependent activities with very precise timelines, as was done in the Tripartite Project.

4. Summary of ISNAR Constraints, Achievements, and Impacts on the Moroccan NARS

Constraints internal to ISNAR

ISNAR's core budget

ISNAR's core budget is extremely limited. This necessitates ISNAR's seeking support for specific projects from external donors, who may insist on conditions which may not be compatible with the modus operandi ISNAR has found to be effective in accomplishing its mission.

Both ISNAR and INRA are aware that the greatest barrier to successful organizational innovation and change is underestimating the process. In its 13-year relationship with INRA, ISNAR has responded to INRA's requests for advisory, research, and training services with the appropriate knowledge, skill, and sensitivity. Nevertheless, given the need to seek external funds, in the recent Tripartite Project ISNAR and INRA were forced to commit themselves to the constraints of a donor less conscious of the complexities of institutional capacity building in the developing world than they.

ISNAR staffing

ISNAR has a relatively small number of professional staff providing in-country services. Approximately 30 officers are available to address the requests ISNAR receives from all over the world. Those officers who possess the expertise and instructional and training skills most frequently requested are likely to become over-extended by the volume of work demanded of them. There is probably a general tendency for officers to overwork while on in-country visits (*"That's what I'm here for, and there is too little time to do what has to be done"*). This may result in some officers being overworked both in The Hague and overseas.

ISNAR professional staff possess a finite range of expertise. Given the limited number of officers on ISNAR's staff, it is virtually impossible to cover all of the areas of research management requested with an equally advanced level of expertise. Officers may develop and enhance their knowledge and skills while working with clients. However, the clients may hold positions within their NAROs which allow them to devote virtually all their time to a particular area or problem. Additionally, besides overseas responsibilities, ISNAR officers have multiple duties at headquarters, giving them inadequate time to devote to their own professional development.

ISNAR's self-perception

- ISNAR officers are conscious that their organization, with its role centered upon institutional capacity building, is virtually unique in the CGIAR system. They are also aware that their contribution to a NARO is less tangible and more difficult to measure than that of most of their fellow-CGIAR centers, which deal mainly with commodity research.
- ISNAR sees its mission as not making a direct impact on the performance of a NARO, but enhancing the capacity of a NARO, in turn making an impact on its own performance.
- ISNAR's professional cadre is more in flux than that of INRA. Therefor INRA's corporate memory of professional interaction may exceed ISNAR's. As a result, ISNAR may underestimate its stature as a long-standing, reliable resource to INRA.

Constraints external to ISNAR

- INRA's senior cadre change roles (but remain in senior management positions) every four years. Those ISNAR-related activities initiated at the moment of role change (e.g. the Tripartite Project) may be slowed down or may run into temporary but significant obstacles.
- ISNAR officers work with the NARS/NAROs in a way that few of the other CGIAR centers do. Most other centers work largely *within a single research program* of one or more NAROs, finding ways to accommodate to their internal structure and operating procedures. ISNAR works *on the entire structure* and management processes of one or more NAROs, with collaboration and cooperation, in order to bring about overall organizational change. In other words, ISNAR officers work almost permanently in the area of institutional change, which is acknowledged as one of the most challenging areas of management.
- Most ISNAR officers have multiple responsibilities in many countries and, therefore, have intermittent contact with their clients. It would appear, however, that in the case of INRA this constraint has been turned into an achievement: ISNAR officers identify the periods in between missions of intense activity as "incubation periods," during which INRA modifies and integrates new ideas into its existing structures and patterns.
- ISNAR has little control over the rate of progress with which any NARO adopts suggested or even agreed-upon changes. ISNAR may never be fully privy to all of the reasons why a NARO does or does not undertake any specific course of action.
- In undertaking advisory, research, or training services in a specified area for a NARO, it may become clear to ISNAR that improvement may be dependent upon prior change in other policy or research management areas. Unless an initial comprehensive diagnostic review is undertaken, this realization could occur after a significant investment of time and effort.
- INRA is a large and complex system, in place since the 1930s. An adjustment of one part of the system can result in unexpected changes in another part.
- INRA is changing and maturing as ISNAR continues to work with it. Although such change and maturation are goals sought by both parties, as it matures, INRA becomes more critical of outside advice and less willing to make immediate changes suggested by ISNAR; it becomes less malleable and more reflective. In other words, INRA becomes a more challenging partner for ISNAR.
- In initiating a project with financial support from a donor, ISNAR/INRA may be forced to accept conditions laid down by the donor which may, in effect, be unfavorable in terms of the realities of undertaking organizational development. The focus of the project may change from satisfying INRA's needs to satisfying the donor's needs, in terms of providing evidence that the project is unfolding in the precise way and within the exact time frame that was originally proposed. Since institutional change seldom runs to plan, unrealistic donor expectations are unlikely to be met. In this way, the viability of a sound project may be unjustifiably put in doubt.
- INRA is capable of holding two mutually incompatible views of ISNAR simultaneously. On the one hand, INRA recognizes its own autonomy, and the advisory or consultative role that ISNAR plays in its decision making. On the other hand, INRA tends to regret that ISNAR's contributions to its institutional development

are not more far-reaching and exhaustive. The exact "end point" of an activity or advisory service provided by ISNAR, therefore can always be in doubt.

Achievements and impacts

Positive response to requests

To date, ISNAR has responded actively and successfully to most demands made by INRA. Where efforts were less than completely successful, e.g. PBS #1, lessons were learned for the future, e.g. PBS #2 (see Section 3, ISNAR's Collaborations with INRA). Where a request was not met, e.g. that monitoring and evaluation be included in the Tripartite Project, it was not for lack of the requisite expertise, but the absence of an officer to provide that expertise in the working language of INRA.

ISNAR's activities with INRA have ranged over advisory, research, and training services within the context of a single project. One type of activity has naturally merged into another as logical and sequential components of the solution to the original problem. Thus, the supposed "boundaries" between these types of activities become blurred. This can be considered an achievement, in the sense that ISNAR's partnership with INRA has evolved into a "seamless" activity with a profound sense of continuity.

Effective use of ISNAR headquarters as a training ground

ISNAR has done a good job of frequently hosting, at its headquarters in The Hague, INRA managers and scientists (senior and junior), who are collaborating with ISNAR professional staff on management instruments and technical reports for publication. However, ISNAR has been less aware of the particular needs that female personnel from INRA may have, especially regarding orientation to ISNAR's facilities (library, computer network, etc.) and organizational culture, as well as their out-of-work social needs.

ISNAR's concept of capacity building and development

ISNAR has shown, since its initial contact with INRA, a sophisticated understanding of how to encourage desired change within existing organizational and administrative structures. ISNAR has never pushed INRA into a rate or magnitude of change which the latter has been unable to incorporate comfortably. The pace with which ISNAR has worked with INRA maximizes the sustainability of the organization's ability to develop its capacity and performance. INRA's senior managers have come to perceive their institution's ongoing relationship and activities with ISNAR as providing, to a certain extent, a management "school" for its promising scientists, engineers, and managers.

Impact on institutional environment

ISNAR has responded successfully to requests to assist INRA in the area of its internal technological environment. ISNAR has also responded to DERD's (then called DEAR) request to begin discussions on ways of integrating the players in the Moroccan NARS.

Impact on institutional motivation

ISNAR has responded successfully to INRA's requests to assist it in shaping its purpose and direction, in order to enhance the institution's motivation to achieve its mission. ISNAR has responded to requests to assist in improving INRA's procedures for hiring and training, and in improving its review, reward, and promotion structure. These last three areas have proved the

most resistant to change due to of INRA's position within the existing system as a government organization.

Impact on institutional capacity

In responding to INRA's 1983 request for a critical review, ISNAR has had a powerful and ongoing impact on decisions regarding the number and location of INRA's research stations, in other words, INRA's organizational structure. ISNAR has also responded successfully to many subsequent requests to improve INRA's institutional capacity, particularly in the following areas:

- strategic leadership – setting direction, personnel management
- organizational structure – roles and responsibilities, and coordination
- program planning, management, and execution – priority setting, strategic institutional planning, research program planning, niche management and, to a limited extent, monitoring and review
- resources allocation and management – human resource planning, financial planning and management, career management, and management information technologies

ISNAR's own linkages and coordination have also been impacted, in particular, the linkages with extension services and producers.

Impact on institutional performance

ISNAR's collaboration with INRA has impacted on INRA's performance in the following areas:

- accomplishing its mission – policies and priority setting for research projects, planning research programs in accordance with national development priorities
- efficiency in resource use – preparing budget estimates, distribution of financial allocations, and administrative system efficiency
- relevance and sustainability – adaptation and restriction of INRA's mission and the projection of its image and reputation

General attributes contributing to ISNAR achievements in Morocco

In general, ISNAR has developed the flexibility to work with NARS of different levels of development. In this regard, INRA possesses a more highly developed agricultural research system than many other countries, and the ability of ISNAR officers to respect and work comfortably with INRA managers—who may at times be critical of certain suggestions or courses of action—is valued within INRA.

ISNAR officers and their INRA counterparts have, on the whole, established very solid personal, as well as sound professional relationships. This critical interpersonal ability on the part of ISNAR officers inevitably enhances their individual professional work with INRA and further contributes to a positive image of ISNAR as a professional institution. Managers and others within INRA frequently praise ISNAR officers for their training and process skills.

5. Conclusions

Changes in INRA

INRA is changing, that is, it is building its institutional motivation, capacity, and performance. The external environment within which INRA operates, including the other members of the Moroccan NARS, is also changing, and it is not totally clear whether INRA's pace of change is in step with that of other NAROs in the system. However, relative rates of change are difficult to assess and INRA's may not be substantially different from the greater institutional environment in which it operates, in particular, the external, administrative/legal and political environments and the national sociocultural environment. Nevertheless, threats to sustainability are ever-present in an increasingly service-oriented public sector suffering from budgetary deficits.

Factors contributing to ISNAR achievements

ISNAR has enjoyed, and continues to enjoy, substantial achievements and impacts on the performance of INRA. These achievements are a result of the following factors, among others which are more elusive:

- the long-term institutional relationship developed between ISNAR and INRA
- the well-developed instructional and participatory training skills possessed and employed by ISNAR officers in conducting their work with INRA
- the sound interpersonal relationships established by individual ISNAR officers and key persons in INRA with whom they work
- the participatory processes ISNAR engages in with INRA
- the respectful and non-directive role that ISNAR plays in its professional association with INRA
- ISNAR's modus operandi in Morocco

A comparison between the traditional way in which ISNAR and INRA worked together between 1983 and 1994, and an examination of the differences introduced with the Tripartite Project between 1994 and 1996, are enlightening.

Following the diagnostic review (1983), ISNAR and INRA tended to work together on discrete, single-component projects. This working method is particularly evident in the case of the program planning and priority-setting activities. In these missions, ISNAR officers tended to collaborate with INRA for relatively short but intense periods, providing advisory and training services. Following this intensive activity, INRA enjoyed a period of reflection and adaptation, examining the details of the problems it wished to address. When ISNAR–INRA activity then resumed, research into appropriate instrument creation took place, often coupled with more extensive training of INRA personnel in the use of the management instrument. This phase was once again followed by ISNAR's retirement, allowing INRA time for integration and consolidation of the innovation.

This pattern, which in practice tends to blur the distinction between ISNAR advisory, training, and research activities, has resulted in some considerable successes. These may be due, in part, to ISNAR being more active in those tasks defined by technical indicators and INRA addressing issues of sociocultural adaptation.

The Tripartite Project introduced a different set of norms and expectations, by setting pre-determined final objectives from the outset. These objectives and the timelines within which

their attainment was planned did not allow for the distinction between the technical and sociocultural aspects. Indeed, the sociocultural assumptions were not made explicit in the project plan and were articulated only when they were identified as obstacles. As a result, the project activity became more intrusive than INRA was able to comfortably bear, especially given its past experience and routines of collaboration with ISNAR.

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Chapter Seven – ISNAR's Impacts in Uruguay: Case Study Results

J.E. Borges-Andrade

1. Introduction

This report assesses the role of ISNAR in the development of Uruguay's National Institute for Agricultural Research—the Instituto Nacional de Investigación Agropecuaria (INIA). The assessment is based on the institutional assessment framework presented in Lusthaus, Anderson, and Murphy (1995). Following that framework, information was collected on four organizational dimensions: the key forces in the external environment, organizational motivation, organizational capacity, and organizational performance.

Information was obtained mainly from on-site interviews,[15] performed during the first week of September 1996. The following individuals were interviewed: Armando Rabuffetti (by phone, in Brazil), Bruno Lanfranco, Carlos Delpiazzo, Carlos Mas, Eduardo Indarte, Gabriel Cerizola, Gustavo Ferreira (by phone, in Uruguay), Guy Hareau, Jose Silva, Juan Pedro Hounie, Marcial Abreu, Mario Allegri, Oscar Pitalluga, and Roberto Symonds.

2. INIA and Its Constraints

INIA became a legal entity in 1989 and it started work in 1990, incorporating the experimental stations from the former "Centro de Investigaciones Agrícolas Alberto Boerger" (CIAAB). INIA's main objectives are: to formulate and implement agricultural research which produces technologies needed in Uruguay; to participate in the country's scientific and technological development, through its own activities or through coordination with other public and private programs; and to link with other institutions to ensure adequate transfer of technology (INIA 1996).

The Institute has four major structural components:

- The INIA board of directors – composed of four members, two representing government and two representing agricultural producers
- National Management Team – integrated by a director and deputy director, covering three managing areas (human resources, information and diffusion, administration and finances)
- regional management – the managers of INIA's five experimental stations
- regional councils – with individuals representing the agricultural sector in the jurisdiction of experimental stations

INIA has 13 national research programs grouped into four main commodity areas:

- plant production
- livestock production
- forestry
- horticulture

[15] The author wishes to thank Guy Hareau from INIA for his friendly and extremely efficient organization of the author's visit and interviews in that institute.

Each program has a coordinator, based on one of the experimental stations, who reports directly to the National Management Team. The four commodity areas have supervisors.

INIA has 461 staff members. One-quarter of this number are researchers, most of whom have a masters degree. Less than five percent of the overall staff work at the national headquarters. The largest experiment station employs 38% of INIA's work force and the smallest, 10%. Some of the organization's staff was inherited from CIAAB and others have since joined INIA (INIA 1996).

INIA's finances are obtained from four sources:

- tax (0.4%) levied on agricultural commodities sold
- government contributions equaling at least the same total as the above tax
- the sale of services and agricultural products
- donations and other sources

Most funding comes from the first two sources.

By law, at least 10% of INIA's budget must be used to finance agricultural or development research projects carried out by other organizations, mostly in response to INIA's national program demands. A fund for technology promotion has been created for this purpose.

INIA's environment

INIA's status, based on its 1989 legal foundation, is seen by both staff and stakeholders as a strength. INIA is an institution with public goals and a private-sector organization. The institute is responsible to the government but has considerable autonomy in making its own decisions. A few people note a potential danger in the strong linkage of agricultural research to the short-term objectives of commercial producers; also mentioned is a lack of concern for the needs of small producers and for the environmental needs of the country as a whole.

The organization enjoys substantial support from the agricultural producers' organizations, and maintains a certain distance from political forces. However, because of the manner in which board members are appointed, the government does hold power within the institute. A potential for conflict is the fact that the timing of elections does not coincide with the cycle of board selection.

There is little "marketing" of agricultural research and few people know what INIA does. But the institute's image, particularly within the agricultural sector, is excellent.

The high average educational level of the Uruguayan population facilitates the transfer and adoption of new technologies. However, within agriculture, there are some conservative groups who hold negative attitudes toward INIA; one example is the beef sector, where there is resistance to any type of change. Nevertheless, compared to other countries, the educational level and cultural features of the people facilitate technological change in agriculture.

An analysis of INIA's technological environment reveals the availability and relative adequacy of information technology, in other words, there is no major constraint in this area. However, the slow pace of change could be a potential constraint, if the institute were to face budget limitations. INIA has made substantial use of information technologies through training and the acquisition of modern equipment. Producers, on the other hand, still make little use of information technology.

Uruguay's transportation, communications and electrical power infrastructures are usually cited as providing excellent support for INIA, and the situation continues to improve. Constraints are identified in some distant locations where there are experimental

inconveniences for the technology of transfer. Also, the country is lacking food processing plants and this is a constraint for an agricultural research institution that wishes to be part of a modern food chain.

The current economic environment is positive for INIA, but future trends may not be so favorable. Opening the internal market to world competition may bring on problems. Uruguay is a small country that is already highly dependent on international prices. Food and input price policies may cause a funding problem in the near future.

The law establishing INIA in 1989 links the organization's budget to a tax on agricultural products, providing INIA with adequate and stable funding. However, delays in receiving budgeted resources sometimes occur, which can cause problems. Some believe that in the current scenario of national structural adjustment, given developments and changes over the past five years, INIA would not be created today.

At present, there is no tendency to increase or decrease financial support for INIA. However, there is a movement on the part of some well-organized contributors to demand that INIA allocate its resources to each major research area in the same proportion as their contribution to INIA's budget. Such a change would mean imposing restrictions on the research of less well-organized sectors, thus forgetting that the institute should benefit the country as a whole. The institutional strategic vision—to open up new research frontiers—would be seriously damaged by allocating research budgets to each sector.

The stakeholder environment at the level of producers' organizations is very favorable for INIA. Producers' representatives participate in the board and in the regional councils, and this contributes to their feeling of "belonging" to the institution. However, the same level of communication is not felt by all producers. One said that communication is poor and that the "heads" know what is going on, but the "feet" do not.

Policies for national development, land use, and the conservation of soil, water, forest, and genetic resources are not identified as constraints to INIA's performance. Most were defined in the 1970s, and they provide support and justification for the institute's activities. A few examples are:

- advanced soil research and laws regulate the use of natural resources
- genetic resource policies were less advanced before the creation of INIA
- international marketing of Uruguayan beef based on the local production of meat in natural conditions (whereas in most developed countries beef production is under confined conditions)
- availability of credit requires use of conservationist practices in the agricultural areas

Some would like to see more laws, as well as more clearly stated concepts and procedures for implementing them, which would probably mean more support for INIA's work.

Organizational motivation

An analysis of INIA's motivation may be made in terms of its history, mission, culture, and incentive/reward structure. A very positive aspect motivating the organization's current performance was the process whereby it was established; it is usually associated with the democratization process of Uruguay, after the fall of the dictatorship. This process was accompanied by strong feelings associated with the need for change—principally, because the whole country was changing and, also, because the old model of agricultural research was no longer working satisfactorily.

The idea of INIA began within CIAAB and was long discussed by researchers. The participation of both staff members and key stakeholders in the design of the institute has contributed to the development of organizational commitment. The prior research experience of staff members contributed to a solid technical basis for the new institution.

However, there is a problem concerning the original CIAAB researchers, who felt that with the establishment of INIA, they had less autonomy to do their work than before. INIA's vision for carrying out research follows a more private-sector model than CIAAB's did. This can be seen in the current institutional requirements for proposing projects. Also, a look at the history of the two organizations reveals that one of the experiment stations had a very important and special role in the past, in relation to the others. Integrating the staff of this staff into the larger INIA has caused some minor problems.

The institute's mission and objectives are strong motivators. Current internal discussion refers to the need for a clearer definition of INIA beyond agricultural producers, in relation to the larger food chain, agribusiness, and environmental protection. Some feel that extension should be accomplished by INIA itself, but it is likely that a separate entity will deal with extension.

There have been some minor cultural problems in the organizational motivation. For example, the integration of livestock researchers has never been as successful as that of plant production researchers. When INIA was established, several livestock researchers wanted a part-time job close to Montevideo. The institute, however, had adopted a policy of full-time employment and was decentralizing research to the experimental stations. Consequently, some livestock researchers are reported to have less motivation than crop researchers.

INIA does not have a homogeneous organizational culture. As touched on above, a major discrepancy exists between those who came from CIAAB and the newcomers. The former still value "missionary" work, while the latter would like to be viewed as career professionals with rewards which are clearly defined. The former group see the latter as lacking "institutional commitment," and the latter see the former as "idealists." There is also a major difference between the attitudes of support staff and research personnel; a view of working at INIA as "just another job" is more common among the former. This, however, is a typical attitude in research institutions' support staffs.

In general, there are excellent ethical values in the institute, a high level of respect for the work of others, strong commitment to the organization, and good interpersonal relationships. Nonetheless, two aspects that could be improved are integrated work teams and integration with other institutions.

For its employees, working for INIA means status and career development. It would be hard to find another institution in Uruguay that offers the same possibilities of training and excellent working conditions. At the time of its foundation, INIA's salaries were much higher than those of CIAAB. However, by 1992–93 the budget had become restricted, due to national economic problems and the fast growth of INIA in its first few years. Today there is not much room for improving salaries or for individual promotions. The main path for achieving promotion is by completing graduate studies. Yet, turnover is low because outside alternatives are not widely available and there are attractive non-monetary rewards. Although organizational commitment remains very high, the institute is in need of a method for performance assessment that motivates staff by recognizing and rewarding individual achievements.

Organizational capacity

An analysis of INIA's organizational capacity shows that there is a clear differentiation between scientific and administrative authorities; during the CIAAB days, confusion existed

between them. However, INIA still lacks experience and sufficient training for the development of organizational structures and long-term strategic institutional planning.

A strategic planning process was initiated for the first time in 1996. Staff members continue to be trained as this process evolves.

Although no systematic method for priority setting exists, it is accomplished, thanks to the small size of INIA and the fact that producer representatives hold permanent seats on the national and regional boards and provide client input into planning.

As for program management and execution, there is a certain lack of supporting structure. There is some confusion in managing a matrix model of research (with national commodity programs and regional experiment stations), and conflicts sometimes arise between program coordinators and station managers. There is some discussion concerning the need for commodity programs.

Program planning needs to be more flexible and less dependent on meetings. Project monitoring has improved, but it would greatly benefit from a more complete management information system. The number of projects could be reduced and the size of their corresponding research teams increased.

Some people would like to have better defined roles, operating procedures, and vertical communication channels, but this may only result in increased problems for the institute, given its small size and its unique organizational model. Researchers acknowledge a lack of scientific leadership within INIA, but clear direction and leadership would probably be too much to expect from an organization less than a decade old. Overall, management is capable, has an excellent status, and enjoys support from its staff. An efficient organizational structure keeps conflict to a minimum.

The institute maintains strong human resources adequate for the current demand. The largest constraint in human resource capacity concerns management: INIA does not have trained human resource specialists. There is insufficient capacity to develop instruments for personnel management, to implement technical procedures, to teach people how to use them, and to monitor and evaluate their use. A substantial training program, supported by a loan from the Inter-American Development Bank (IDB), has had an important impact on the level of research training. However, no similar INIA-initiated training program has been implemented. Some people fear that the end of the IDB program will produce a gap which is going to be difficult to fill.

Infrastructure is another important strength of INIA. Research activities are supported by appropriate equipment, including modern information and communication technologies. Buildings are in very good shape, partly due to a loan from IDB. A major investment in these core resources has been made, but funding will be needed to keep them operational in the future. INIA finances have been stable to date, but this may not continue, due to the structural adjustment process in progress.

There are relatively few close links with other organizations. INIA’s excellent infrastructure and human resources are sometimes a source of conflict with other government organizations. However, the fund for technology promotions has served to improve such relationships. There is a need for more coordination.

Links with extension are somewhat fragile at the institutional level, but stronger at the individual level. Links with producer organizations and research institutions outside Uruguay are excellent.

Organizational performance

Three aspects of organizational performance will be briefly discussed: effectiveness, efficiency, and relevance.

INIA is generally viewed as an effective organization. Some observers feel that INIA should adopt a longer-term vision. The current process of strategic planning may help in achieving this.

INIA's effectiveness varies by commodity. Rice and dairy cattle are often cited as areas where research done by INIA has had an impact. There are excellent publications, many of which are based on work originated by CIAAB. To improve effectiveness, INIA needs to better assess the demands for new technologies and sharpen its priorities.

The administrative system is generally considered efficient. Some problems concerning internal communications and transportation have been reported; however, in general, resources are well used. INIA may have started with too many projects and an excessive spectrum of activities. A good information system controls costs, but some improvements are needed to control projects and stations. Perhaps it is still a bit early, but there is a clear internal demand for studies on the return of research investments.

It can be said that INIA's relevance is ascending. Client satisfaction is high, except for the above-mentioned cases. Today, the institute is a frequent object of discussion in producers' associations, partly due to its performance and partly because of the current international demand for technology. INIA has an excellent image within the agricultural sector, which is strengthened by producer participation on INIA's boards and councils. However, INIA still needs to build its image within Uruguayan society as a whole. Enhanced sustainability requires improved linkages with the external environment, through the existing internal mechanisms and through researchers' contact with the world beyond the confines of the research station.

3. The Impact of ISNAR

Establishment of INIA

A desire to change CIAAB was present and being discussed within the center before the end of the dictatorship. In the second half of the 1980s, ISNAR was invited to formulate a proposal for improvements. This resulted in the presentation of a strategic planning review model, as one guideline for the service which was about to start in Uruguay (Valverde 1988). A large loan was obtained from the IDB for the reconstruction of stations, replacement of equipment, and graduate-level staff training. ISNAR's support and the acquisition of the IDB loan coincided with the rise of a strong local desire for change. In an inter-office memorandum, Valverde (1986) wrote:

> *"Given the context of the high degree of government commitment, the interest and willingness shown at various levels, and actions already undertaken by the agricultural sector to move ahead toward strengthening research activities within Uruguay, it appears to be an excellent opportunity for ISNAR to cooperate with a reasonably high likelihood of success."*

ISNAR contributed further proposals and technical documents dealing with the operations of the new institute:

- establishment of a planning system (ISNAR 1990a)
- policies and strategies (ISNAR 1990b)
- organization and structure (ISNAR 1990c)

- priority setting (ISNAR 1990d)

The fact that these documents were jointly prepared (see subtitles in references) produces some difficulty for distinguishing between the efforts of ISNAR and local personnel. This, however, does not detract from the acknowledgment that such a collaboration was an adequate (and successful) strategy for incorporating the ideas of the local culture. Examining these documents, especially the first three, the author of the present paper found that a greater correspondence exists between what was prescribed by ISNAR and the current reality than most interviewees acknowledged.

According to the interviews conducted for this study, the documents produced by ISNAR in the early 1990s have not been completely implemented by INIA. They have, however, provided useful inputs into the process of establishing INIA as an operating research organization. The arrangement of INIA's national research programs is attributed by some interviewees to ISNAR. ISNAR organized a priority-setting exercise (ISNAR 1990d) and provided software for management information systems. In this sense, INIA has learned from ISNAR (as ISNAR has learned from INIA), but has made its own decisions and developed its own courses of action.

Beyond documentation, ISNAR also provided support through frequent visits (including the Director General) and the creation of a "task force," which had as one of its goals intensive lobbying with the appropriate Uruguayan authorities at the Executive and Congress levels, and long discussions with researchers and agricultural producer representatives.

ISNAR's attitudes toward Uruguay at the time were respectful, exhibiting high levels of optimism for the possibility of building an improved national research institution. Valverde has made an effort to document the experiences ISNAR had in Uruguay (1996). This case study will not replicate information which is available in that text. It describes those activities from the perspective of the beneficiaries, represented by the interviewees.[16]

The internally motivated participation of the local actors resulted in the 1989 approval of the law establishing INIA, and the subsequent creation of the organization in 1990. This conferred an excellent status on the institute and a favorable legal environment within which to begin operations. ISNAR's important role in establishing INIA, and especially in consolidating it as an operating organization, was acknowledged by most interviewees.

One important input provided by ISNAR was information concerning how other countries were dealing with similar problems. International seminars on the issue were promoted by ISNAR.

ISNAR's impact on three other environmental factors is directly linked to the task force mentioned above. This group actively participated in discussions in favor of the co-financing status of INIA. In this way, ISNAR seems to have contributed to improving the external political and economic environments of INIA.

A similar line of reasoning may be established for the stakeholder environment. Some INIA stakeholders participate in the board and councils, according to the law which established INIA. Interviewees referred to this as one of the most important aspects of the way in which the institute functions. By discussing the benefits of a participatory approach during the negotiations that created INIA, ISNAR seems to have played an important role in this.

[16] Differences between the two perspectives are bound to exist. In an effort to keep the present paper close to its initial objectives, they will not be compared here.

As for the sociocultural, technological, infrastructural, and natural resource management environments, the interviewees' reports seldom identify ISNAR impacts. There are reports of involvement with technological and natural resource management issues, but little evidence of impact.

Although ISNAR is not seen as a major actor in the historical development of INIA, it is usually associated with the positive elements of INIA's history (i.e. the aforementioned motivational factors resulting from the fall of the dictatorship and the subsequent democratization of Uruguay). ISNAR is remembered for its support of the founding 1989 law, and the preparation of technical documents.

INIA's current mission is viewed as very positive in motivating performance, in comparison with the earlier mission of CIAAB. Again, this impact can be traced to ISNAR's role in establishing and operationalizing INIA. One major influence cited by interviewees was ISNAR's insistence that INIA's mission should only include research, and not extension.

ISNAR has not specifically addressed the issue of a homogenous culture within INIA, as these characteristics are outside the scope of any ISNAR action. Interviewees did say that ISNAR recognized unifying features such as national attitudes, ethnicity, and educational levels as strengths when the institute was being established.

Human resource management

In terms of INIA's inflexible monetary reward structure and decreasing salaries, ISNAR has made an effort to influence the organization by preparing a document and presenting suggestions for human resource management (in the areas of career development, job descriptions, salary structure, and performance assessment).[17] According to those interviewed, this document provided the basis for establishing a human resources unit. There is little evidence, however, that specific recommendations have been implemented or have had long-term effects on INIA. The organization needs more trained people to better manage these human resource issues.

One exception in the implementation of recommendations, however, seems to be those concerning graduate training. An ambitious training program has been established with funding from the IDB to send researchers for graduate courses at the masters level. This initiative, however, is usually associated by interviewees with IDB, not with ISNAR.

Planning, monitoring, and evaluation

INIA is currently revising its planning, monitoring, and evaluation (PM&E) processes, which are aimed at promoting change in two major capacity factors: strategic leadership and program management. ISNAR's role has been to stimulate this revision through a regional training project, in which Uruguay has actively participated (Cheaz et al. 1993).

It is too early to evaluate the effects of this project; some people feel that the effects have been in motivating and breaking down resistance to change, rather than teaching specific methods. Moreover, the ISNAR project effects have been confounded with other actions in the region, particularly an intensive collaboration effort between countries (particularly Argentina and Uruguay) in the area of PM&E (see Echeverría, Ferreira, and Dabezies 1989; and the participants list in Cheaz et al. 1993). Besides participating in ISNAR training events, INIA personnel also usually take part in South American meetings held by the Inter-American

[17] Several interviewees made references to this document, however the author of this paper has not had access to it.

Institute for Agricultural Cooperation (IICA) and other regional organizations, where there is an intense exchange of information on these matters.

Some of those trained in the PM&E project now have the opportunity to use the concepts learned as well as to reconsider some of the earlier recommendations.

Infrastructural capacity

ISNAR has alerted INIA, by means of documents and training sessions, to the importance of possessing other core resources, such as an appropriate research infrastructure, modern information and communication technologies, and stable funding. The IDB loan provided support for the first two and there is a high level of satisfaction with the current research infrastructure. Again, this is always cited as an impact of IDB, not ISNAR.

Linkages and coordination

The last capacity factor refers to linkages and coordination. Again, ISNAR's initial contribution was that of "alerting." Although ISNAR's actions have been primarily in supporting the continuation of the existing (CIAAB) links and providing additional information for linking INIA to the international research community, its major contribution to linkages was supporting the initial line item which provides for 10% of INIA's budget to finance research activities outside the organization. This has created a strong network of allies in Uruguay. Nonetheless extension links are still rated as poor.

Institutional performance

Regarding institutional performance, the assessment is that INIA's work is highly relevant and effective in the short-run. ISNAR's impacts are mainly reported as being on the institute's environment, motivation, and capacity. The most important key impact has probably been on the legal environment, which in turn has spread its effects to other factors.

Although INIA is considered efficient, some people would like to see more evidence of the return on investment in INIA facilities and activities. ISNAR's impacts on efficiency are seen as arising from its role in the establishment of INIA's overall organization and through recent PM&E training activities.

INIA is usually considered relevant and sustainable. Here, too, ISNAR's impacts were seen by the interviewees as related to the institutional model established (participation of agricultural producer representatives in the boards; different funding sources) and to recent PM&E training.

4. Conclusions

The most important impact ISNAR has had on INIA's **environment** lies with ISNAR's support for the establishment of INIA as an autonomous entity with the active participation of agricultural producers in funding and governance. This has produced indirect impacts on INIA's external political environment, on the level and stability of funding, and on the participation of its clients and stakeholders in the institution's decision making. Almost all those surveyed referred to these impacts. No negative impacts were identified.

ISNAR's major impact on INIA's **organizational capacity** also concerns its work in establishing INIA—i.e. staff commitment to the new mission. ISNAR's activities and efforts on the reward structure have not been as cost-effective. Regarding **institutional capacity**, the

major impact is again an indirect effect of ISNAR's work in establishing and structuring INIA. Activities in the area of PM&E are too recent to allow assessment of their impact.

No major direct effect on **institutional performance** is credited to ISNAR. Furthermore, most of those interviewed do not expect there to be such direct effects in the future.

Overall, the relationship between ISNAR and INIA is usually assessed as very good. However, several interviewees pointed out that in the long run, the institutional relationship developed between INIA and ISNAR should not be based primarily on personal, individual relationships, as it has been in the past.

There is a common desire to see ISNAR activities more adequately coordinated, and for ISNAR products (documents, studies, suggestions) to be seen not as the "final word," but as just one set of inputs into the process of change. According to interviewees, services should be amplified on the basis of research and ISNAR should not define published papers as the final products of their work. Future activities should draw on successful experiences of institutions in the region and elsewhere.

In summary, ISNAR seems to have had an important role in the establishment of INIA, mainly prior to 1990. Its direct impact has been reduced since that period.[18] ISNAR financial resources became a constraint limiting the opportunities for long and intense relationships after 1990. For INIA, a feeling of maturity and self-reliance might have produced a desire to follow through alone; this could have resulted in people ignoring important technical recommendations contained in the numerous ISNAR documents.

INIA's relatively successful experience should not be attributed to ISNAR alone but to the fertile ground which existed for ISNAR activities. Uruguayan agricultural researchers were highly trained and motivated, and had the capacity to receive, process, and use the information provided. A new wave of activities seems to be underway supporting a different paradigm, one which does not value bilateral relationships so much, but shows a preference for cooperation among a variety of organizations in the region. This wave is too recent to provide observable effects on the institutional development of INIA.

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Echeverría, R.G., G. Ferreira, and M. Dabezies. 1989. Returns to investments in the generation and transfer of rice technology in Uruguay. ISNAR working paper No. 30. The Hague: International Service for National Agricultural Research (ISNAR).

[18] The author reviewed a list of documents, training, and non-training events and activities recently organized by ISNAR. In the period from 1991 to 1995, 530 documents were produced by ISNAR only 2 of which specifically focused on Uruguay. One is Cheaz et al.(1993) and the other seems to be a Spanish translation and publication of Echeverria, Ferreira and Dabezies (1989). In the period 1994–95, the only training event was the workshop in PM&E (five days) reported by Cheaz et al. (1993), which did not actually occur in that period, and no non-training events were listed for Uruguay. The total number of training and non-training events in the world totaled 243. In the same two-year period, ISNAR reported 424 activities, none of which focused on Uruguay (although 2 were regional activities in Latin America and the Caribbean).

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Chapter Eight – Meta-Evaluation of ISNAR Reviews

T. Smutylo and C. Lusthaus

Commentary

As part of the institutional assessment exercise, Terry Smutylo and Charles Lusthaus devoted a day each to evaluate a number of review reports provided by ISNAR (Annex 8.1). The purpose was to assess the quality of reports ISNAR was receiving from internal and external reviewers and to recommend, if necessary, ways to improve this process.

The team agreed upon a set of seven criteria to guide their reading and comments (Annex 8.2). They independently assessed each document using the worksheet presented in Annex 8.3. They then compared their results, synthesized findings, and developed recommendations for ISNAR.

General observation

As we understand the process, besides brief TORs, internal or external reviewers are given relatively little guidance in carrying out their evaluation assignments. The approach appears to be one of engaging people with expertise in relevant areas, and obtaining their views and impressions regarding the performance of a particular program or activity. Focus and emphasis in the reports appear to be left largely to the expertise and judgment of the reviewer. Our observation is that this has led to a wide variety in the quality of the work provided to ISNAR.

Audience

In most documents, it is unclear for whom the evaluation report was written. Who are the primary and secondary audiences of ISNAR reviews? Who is responsible for using the evaluation findings? ISNAR reviews could be more useful if the audience were more clearly defined.

Purpose

In most of the evaluations there are statements of purposes and objectives for the study being undertaken. In about two-thirds of the reports, verbs such as “assess,” “review,” and “better appreciate” were used to define purpose. Purpose statements should be more specific and tell what specific use will be made of the findings.

Quality of questions

Few studies approach the evaluation through the development of clear questions based on a set of well-defined evaluation issues. Thus, beyond the TORs, relatively little work was evident in question development.

Methodology

The basic methodology employed by the ISNAR internal or external reviews is that of “experts’ report.” In general, the evaluations tend to follow the same approach—observations by experts who personally integrated the data they gathered, and then informed ISNAR of their assessment and recommended actions. In this approach, little attention is paid to developing a conceptual framework, using instrumentation, identifying appropriate samples, linking data and data analysis, etc. The experts provide their opinion on the issues posed in

the TORs.

Accuracy

It is very difficult to judge the accuracy of these reports, as very little data and poor limited information on methodology is provided. The advice given by evaluators may be highly insightful and useful—even where there is no description of methodology or data provided. However, this is a judgment to be made by the client or audience, which is impossible to assess from these reports alone. In general, the issue of accuracy is tied up with the skill and reputation of the external reviewers and evaluators.

Report quality

In general the reports are relatively easy to read. Most have executive summaries and differentiate the recommendations from the text. While there was little time for a careful analysis, it appears that most evaluations covered the topics intended.

The biggest single issue in terms of quality in the reports reviewed was in the nature of the methodology itself. In the "experts' report" style, findings and conclusions are not backed up by data. Correspondingly, in the ISNAR evaluations, relatively little systematic data is reported to readers who are usually not identified.

Report use

Since the audience and purpose are not stated in most reports, it is unclear who is supposed to use the report and how. No information was provided on follow-up or use of the results.

Recommendations

Most of the reports evaluated, assuming the good judgment and credibility of the consultants, would serve some accountability and decision-making purposes. However, in commissioning evaluations, assessments, or reviews which will act as tools in organizational learning and management, ISNAR staff should ensure that all resulting reports:

- State very clearly who requested the evaluation and who is the intended audience of the completed report.
- Specify clearly the purpose for which the audience requires the report and what the information will be used for.
- State the principle issues or questions which the report tries to address.
- Make recommendations which are prioritized or weighted and which are directed at specific persons, responsibility units, or organizations.

These suggestions apply to all types of reports, including the "experts' report" which the CGIAR system frequently uses. In addition, ISNAR could strengthen its repertoire of evaluation approaches by introducing terms of reference which include not only the above four suggestions, but which also demand a more systematic treatment of data. The goal would be to produce reports which also:

- Identify the questions elaborated from the principle issues.
- Specify the types of data used to answer the questions, the sources of data, and the methods of collection.
- Describe how the data was analyzed and interpreted.

Annexes[19]

Annex 2.1 Methodology for the Case Studies

The overall purpose of the case studies is to provide the EPMR panel members with a descriptive assessment of ISNAR achievements, constraints, and impacts in specific country contexts. Each case study also provides the opportunity to gain insights into the contexts and environments in which ISNAR performs its work. In doing so, the studies supplement the information gathered from the NARS and the stakeholder surveys, providing both detail and depth.

Fifteen countries were identified by the study team and the external group of consultants as meeting the characteristics suitable for case studies. Given the limited time and resources available, three countries from this group were selected, representing the minimum range of types and duration of contact with ISNAR (policy and management research vs. training vs. advisory services; short- vs. long-term collaboration). The countries are Kenya, Morocco, and Uruguay.

Each of the three case studies were carried out by a different member of the external group of consultants: the Kenya case study, by Seme Debela; the Morocco case, by Ronald Mackay; and the Uruguay case, by Jairo Borges-Andrade.

Each consultant was provided with and familiarized himself with key documents from ISNAR files, describing ISNAR's contacts with the country concerned and representing ISNAR's policy and management research, training, and advisory services carried out with the NARS/NAROs of each country.

In carrying out the case studies, each consultant identified areas where the NARS/NAROs requested ISNAR assistance, ascertained why these areas were chosen, and reported the results of the assistance.

The consultants also examined the following aspects of ISNAR'S work:

- Did ISNAR respond to requests by NAROs?
- Was a product or service delivered?
- If so, was the product or service accepted and acted upon by the country?
- Was the product or service helpful?
- Were the results favorable in the eyes of the different partners and stakeholders, etc.?

Each consultant developed a schedule of activities and appointments jointly with the NARS/NARO staff, and was responsible for coordinating his in-country activities with the NARS.

Each consultant was equipped with an institutional checklist, derived from the IDRC/Universalia institutional assessment model (Lusthaus, Anderson, and Murphy 1995), to evaluate ISNAR activities and effects on the NARS and selected NAROs. The checklist, which covers the areas of institutional environment, motivation, capacity, and performance, is in Annex 2.2.

[19] Annex numbers relate to the chapters to which they correspond.

Each consultant met with a suitable spectrum of staff, and used the key documents supplied by ISNAR to arrive at an objective assessment of ISNAR's effects in the areas identified. Each consultant referred to relevant institutional documents during the country visits and, in consultation with national staff, determined the results of ISNAR collaboration with the NARS.

The consultants each prepared a draft report on the findings of the country mission. No common format was imposed on the case study reports. In light of the range of experiences of the three consultants, the differences between the countries chosen for the case studies, and the innovative nature of the data-gathering instruments and procedural guidelines, more was gained by allowing each consultant to develop his own case study report. The final case study report will be shared with the collaborating NARS.

Annex 2.2 Checklist for the Case Studies

The following checklist is based on the general model for institutional assessment and the accompanying checklist in Lusthaus, Anderson, and Murphy (1995), published by IDRC and the TAC Secretariat (1996).

In the IDRC framework, an organization's performance is viewed as a function of its environment, motivation, and capacity. Hence, the four main dimensions for organizational assessment are:

1. the external environment
2. organizational motivation
3. organizational capacity
4. organizational performance

The IDRC checklist was modified to apply more directly to national agricultural research organizations.

For each group of factors in the checklist, case study authors were encouraged to identify specific constraints to performance and explore ISNAR's role in addressing them. They were encouraged also to identify specific achievements of the NARO, examples of ISNAR's role in the achievements, and specific means by which ISNAR contributed to these achievements.

1. External Environment

❏ *Administrative/Legal Environment*
- Legal status
- Linkages between NARS/NARO leaders and high-level decision makers

❏ *External Political Environment*
- Form of government
- Level of government support
- Concrete manifestation of government support
- Attitude to investment in agricultural research
- Level of funding
- Stability of funding
- Accessibility of supportive persons in government
- Political stability and consistency
- Authority delegated to the NARS/NARO
- Political status of the NARS/NARO

❏ *Sociocultural National Environment*
- Work ethics/attitudes
- Issues of ethnicity
- Issues of language
- Educational level

❏ *Technological Environment*
- Enabling environment for uptake of improved technology
- Availability and adequacy of information technology
- Attitude toward technological literacy of NARS/NARO personnel
- Level of technological literacy of NARS/NARO personnel

❏ *External Economic Environment*
- National economic environment

- Food and input price policies
- Structural adjustment
- Labor law
- Government policy and practice regarding funding

❑ *Stakeholders*
- Categories of stakeholders
- List of stakeholders (donors, clients)
- Level of donor support
- Level of interaction with clients
- Level of collaboration with similar organizations

❑ *Infrastructural Environment*
- Marketing and input infrastructure
- State of the infrastructure at national level (transportation, buildings)
- Availability of adequate, reliable utilities

❑ *Policy Environment*
- National development policy
- Relationship between national development policy and agricultural research priorities
- Clarity/rationale of agricultural research policies and priorities
- Rural development policies
- Clarity/rationale of land use and conservation policies underpinning utilization of soil, water, forests, and genetic resources

2. Organizational Motivation

❑ *History*
- Date and process of founding
- Major historical achievements/milestones
- Major struggles
- Changes in size, growth, programs, leadership, structure

❑ *Mission*
- Evolution of the NARS'/NARO's mission statement
- Role of the NARS'/NARO's mission in shaping the organization, giving it purpose, giving it direction
- NARS'/NARO's system goals
- Types of research/research products that are valued
- Types of extension that are valued

❑ *Culture*
- Work ethics/attitudes within the NARS/NARO
- Attitudes about colleagues, clients, other stakeholders
- Attitudes toward equity (women & gender issues)
- Issues of ethnicity
- Issues of language
- Educational level
- Values, beliefs, customs, traditions affecting mission fulfillment

❑ *Incentive/Reward Structure*
- Key factors, values, motivations to promote productivity
- Intellectual freedom, stimulation, autonomy
- Remuneration, grant access, opportunity for advancement
- Peer recognition, prestige, status

3. Organizational Capacity

❑ *Strategic Leadership*

- Status and governance
  - legal framework
  - level of autonomy
  - governance
  - representation
  - authority
  - direction setting
  - procurement
  - personnel management
- Organizational structure
  - roles and responsibilities
  - coordination
  - authority
  - delegation
  - accountability
  - two-way flow of information
  - level of collegiality
- Leadership
  - authority
  - direction setting
  - resource development

❑ *Program Planning, Management, and Execution*

- Priority setting
- Strategic institutional planning
- Niche management
- Monitoring and review

❑ *Resource Allocation and Management*

- Human resources planning
  - Needs assessment
  - Recruitment
  - Orientation
  - Job descriptions
  - Training/professional development
  - Performance management, monitoring, and review
  - Career management
  - Compensation (wage rates, incentives)
  - Equity (distribution of rewards and tasks)
  - Timeliness of recruitment
  - Ethos (encouragement to achieve excellence)

❑ *Other Core Resources*

- Numbers and location of research stations
  - located in key agroecological zones
  - attractive to researchers and their families
  - permit a critical mass of scientists and support in each
- Infrastructure
  - research supported by appropriate number and location of research stations

  - biometric services
- Technology
  - information and communication technologies
  - levels of technology appropriate to perform work
- Funding
  - long-term stability
  - acceptable standards of funding
  - proportional to development budgets

❏ *Linkages and Coordination*

- Government policy regarding collaboration within the system
- Two-way communication between NARS/NAROs and high-level decision makers in government
- Facility to mobilize political and financial support for agricultural research
- Collaborative linkages between crop, animal and forestry, and other environmental research
- Collaborative linkages with rural development planning bodies
- Communication between national agricultural research councils
- Collaboration between public and private institutions
- Clarity of division of labor between collaborators/partners

4. Organizational Performance

❏ *Effectiveness in Moving toward Mission*

- Adequacy of NARS'/NARO's mission statement
- Policies for research (clear, ranked, established on sound methods, related to national development policies)
- Research objectives (identified, prioritized, and aligned with national development policies)
- Research performance (major achievements, general level of research productivity defined according to NARS'/NARO's mission and values, utilization of results)
- Service performance (support to research community: NARI/NARO)

❏ *Efficiency in Resource Use*

- Distribution of financial allocations—costs compared to benefits
- NARS/NARO staff productivity—ratio of staff costs to staff activity
- Clients (program completion rates)
- Administrative system efficiency

❏ *Relevance and Sustainability*

- Adaptation of NARS'/NARO's mission
- Client satisfaction (identify "clients") of NARS/NARO
- Meeting expectations of key stakeholders
- Adapting NARS/NARO to its environment
- NARS'/NARO's image/reputation
- Sustainability

Annex 3.1 Countries or Initiatives Referred to by Stakeholders

The table below indicates those countries, institutions, or initiatives to which respondents referred in their experiences with ISNAR or the reputation of ISNAR activities.

Type of reference	Country/institution/initiative
Positive references	Bhutan Costa Rica Kenya Morocco Mozambique Uganda Uruguay ASARECA[1] CGIAR–NARS Partnership Initiative IBS[2] SPAAR[3]
Negative references	Bolivia Tanzania

[1] Association for Strengthening Agricultural Research in Eastern and Central Africa
[2] Intermediary Biotechnology Service
[3] Special Program for African Agricultural Research (World Bank)

Annex 3.2 Instrumentation for Stakeholder Survey

The interview guide was developed by IDRC with feedback from the consultant team and ISNAR, based on a preliminary instrument designed by the team during the first mission to ISNAR in May 1996. The intention was to canvass the stakeholders on ISNAR's strengths, weaknesses, constraints, outputs, impacts, reputation, and suggestions for future direction. (See Annex 3.3. Please note that the "products and services" list under "Output categories," which was initially developed as analytical backdrop to question 4, proved too detailed.)

Interviews lasted between 30–60 minutes. The instrument proved to be somewhat repetitive in many cases, partially because respondents have limited knowledge of experience or interaction with ISNAR. This, however, was not a problem, mainly for two reasons. First, in some cases, it provided respondents with the opportunity to reflect on their initial responses or add to them. Second, because the survey was conducted by phone in a conversational style by a single interviewer, it proved to be flexible and appropriate for the flow of the conversation (e.g. "You mentioned earlier that _____ , would you consider it the most important constraint that ISNAR faces or is there something else?"). Overall, the instrument served the purpose well and a better example might not easily be created for such a diverse group—diverse both in terms of the respondents' interest and their capacity to respond with informed comments, subject to their knowledge of, and relationship with, ISNAR.

Method and response rate

In cooperation with the consultant team and ISNAR, IDRC selected an initial sample of 30 interviewees from a list of 101 contacts provided by ISNAR. The sampling methodology and sample profile, which was distributed to the EPMR team and ISNAR, is described in Annex 3.4.

The three contacts selected for test interviews proved to be among the more difficult to reach stakeholders. Those preliminary contacts were therefore integrated into the general survey. Ultimately, the test interviewees were those who could be reached first. These test interviews did not result in any changes to the instrument.

Several of the contacts delegated another staff member to respond. In one case, two individuals from the same organization responded, but one spoke based on the experience of his previous position in a different organization. The final response rate is thus 24 out of 30 initial contacts (80%). Twelve out of thirteen donor contacts responded, three of the four non-granting donors, five of the six collaborators, and four out of 7+1 in the "other" category (see Chapter 3, footnote 1).

Annex 3.3 Interview Guide for Stakeholder Survey

Briefly outline the format of the interview with the interviewee. Start with a couple of warm-up questions, then go into some of ISNAR activities, and finish with your input on the larger questions for an institution such as ISNAR.

Name _____ Date_____ Position _____ Organization _____
Warm-up
1. How did you come to know ISNAR? Probe for: Known for how long? In what ways? Experiences with ISNAR? Basis for knowledge / opinion of ISNAR?
2. In the last five years, has your organization had any contact with ISNAR, such as provided funding, used its services, or even just met informally? (look for nature / degree / intensity of contact and stake, e.g. funding) Record: Yes_____ No_____ Probe for: In what ways? Collaboration? How? Funding? Amount? Portion of donor budget? Informal meeting? Networking? Participation? How? Use of services / products? What and for what purpose? Workshop?

Continued

Continuation

3. What are the three most significant activities your organization has worked on with ISNAR?

Name of activity:
Type of primary output:
Capacity building?
Linkages?
Training?
Awareness?
Publications?
Other, what?

Output Categories

4. Do you have direct experience with, or intimate knowledge of, any of ISNAR products or services?

Record products / services for analysis: (✓)

Products / services	(from # 4) Knowledge/ experience	(from # 5) Comp. advantage	(from # 5) Should drop
ISNAR publications			
Books			
Management guidelines			
Research reports			
Briefing papers			
ISNAR newsletter			
ISNAR annual report			
Books and articles by ISNAR staff published outside of ISNAR			
Training courses and workshops			
Research seminars			
Policy seminars			
Conferences			
Advisory service missions			
Diagnostic review missions			
Planning missions			
Assistance in improving management processes			
Assistance in improving agricultural research policies			
Assistance in improving NARS' or NAROs organization and structure			
ISNAR methods and tools			
INFORM			
Strategic planning Monitoring & evaluation			

Continued

Continuation

Categories to keep in mind:

- In-country capacity-building for research policy and management
- Development of regional linkages and coordination mechanisms
- Training workshops
- Awareness-raising and methodology development workshops
- Publications

5. For which of the products and services just mentioned do you consider ISNAR to have a comparative advantage (does it well and is needed)? (Check off in matrix under 4.)

Are there ones it should drop? Why? (Check off in matrix under #4.)

Are there ones it should take on board? Why?

6. Would you say that ISNAR's in-country projects for strengthening NARS are:

_____irrelevant _____somewhat relevant _____highly relevant _____don't know

Probe for: Why are they not relevant?

In what ways are they relevant?

7. Do ISNAR's in-country strengthening projects produce usable outputs that have a practical application?

_____not useful _____somewhat useful _____very useful _____don't know

Probe for: Examples that illustrate choice of rating.

8. Does ISNAR's work (projects, products, and services) help your institution fulfill its mandate?

Record: ____Yes ____No ____Somewhat

Probe for: How and in what areas?

Continued

Continuation

9. Overall, would you rate the benefits of ISNAR's work:

to your institution as: ____low ____medium ____high ?

toward strengthening NARS as: ____low ____medium ____high ?

General questions

10. What, in your view, is ISNAR's principal achievement over the last five years?

11. How would you assess ISNAR's effectiveness in strengthening research policy and management in NARS, and what are its strengths and weaknesses in this area?

12. As far as you know, what is the reputation of ISNAR with respect to the overall quality of its work and its impact?

Record rating of the quality: ____high ____low ____medium

13. Has ISNAR had any important impact on NARS?

Probe: If yes, what?

If no, why not?

14. In your opinion, what is the most significant constraint ISNAR faces?

Continued

Continuation

15. *Do you have suggestions for removing constraints and improving the impact of ISNAR's future work?*
16. *Any additional comments?* *Thank you for your cooperation*

Annex 3.4 Proposed Stakeholder Survey Sample Selection (July 19, 1996)

The interviewees for the stakeholder survey were selected from a contact list provided by ISNAR. The author analyzed the list in terms of geographical location, type of relationship (donor, collaborator, and other, such as members of committees), and donor type. A sample of 27 interviewees (+3 test interviews) was chosen to reflect the overall profile of the list.

The sample is composed of 12 currently granting donors, 4 donors currently not funding ISNAR, 6 collaborators, and 5 others (see Chapter 3, footnote 1). Eight are located in the South, the rest in the North—an approximate 70/30 North–South distribution. Contacts in Africa are strongly represented, reflecting ISNAR's regional emphasis. The regional distribution is 50/25/25 for Africa, Asia, and Latin America and the Caribbean, respectively. The three test interviews include one donor and two respondents in the "others" category.

This sample reflects quite closely the provided list in terms of geographical distribution and type of relationship. It covers 37% of the entities or 28% of all the contact names provided. It is slightly skewed toward northern representation as well as toward Africa for the categories "donors" and "others," and toward Asia and Latin America for "collaborators." The sample has a slight overrepresentation of multilaterals.

Annex 3.5 Stakeholder Organizations Surveyed

- Canadian International Development Agency
- Consultative Group on International Agricultural Research (Secretariat)
- Czech Agrarian Chamber
- Danish International Development Agency
- Deutsche Gesellschaft für Technische Zusammenarbeit
- Deutsche Stiftung für Internationale Enwicklung
- European Commission
- Ford Foundation
- Instituto Interamericano para la Cooperación Agricola
- International Development Research Centre
- International Fund for Agricultural Development
- JIRCAS, Japan
- Michigan State University
- Ministry of Foreign Affairs, the Netherlands
- Overseas Development Assistance, United Kingdom
- Philippines Department of Agriculture
- Royal Tropical Institute, the Netherlands
- Southern African Centre for Cooperation in Agricultural Research
- Swedish International Development Authority
- Swiss Agency for Development Cooperation
- Technical Centre for Agricultural and Rural Cooperation, the Netherlands
- United Nations Environment Program
- United States Agency for International Development
- World Bank

Annex 4.1 Elaboration of the Policy and Management Areas

Each of the 10 policy and management areas were elaborated for use by the interviewees and the interviewers. The latter list was longer and more detailed than the first, which was faxed to interviewees prior to the survey being performed.

1. Areas for use with interviewees

❑ *Formulation and implementation of agricultural research policy*

- Setting broad research goals and priorities, consistent with development goals and strategies
- Adjusting goals when appropriate

❑ *Strategic and long-term planning*

- Consistent with national goals

❑ *Organizational structure and governance mechanisms*

- Clearly defined roles and responsibilities
- Communication for coordination and accountability
- Framework to review and update policies, strategies, and procedures

❑ *Management of research programs*

- Program planning based on priorities and identified needs
- Preparation of research budgets, work plans, and project statements
- Clear objectives and indicators for measuring progress and success
- Using evaluating results to improve future research
- Integration of new topics and approaches in the research agenda

❑ *Management information systems*

- Available information so that managers can make informed decisions and satisfy accountability requirements

❑ *Management and dissemination of information*

- Acquiring, storing, cataloging, reporting, and disseminating scientific information to researchers

❑ *Human resource management*

- Training and career development for staff
- Adequate remuneration and incentives

❑ *Financial management and accountability*

- Timely disbursement and reporting of use of funds
- Supports organizational objectives and accountability requirements

❑ *International and local linkages and networks*

- Links with clients and stakeholders

❑ *Organizational culture, staff commitment, and loyalty*

- Staff understand and support their organization's mission and objectives

- Willingness to defend the organization if threatened (e.g., by budget cuts) and willingness to overcome organizational problems

2. Areas for use with interviewers

❑ *Formulation and implementation of agricultural research policy*

- Setting broad research goals and priorities
- Alignment of research objectives with development goals and strategies
- Taking action to change these goals where appropriate

❑ *Strategic and long-term planning*

- Development consistent with national goals

❑ *Organizational structure and governance mechanisms*

- Defined role and responsibilities for operational units that facilitate communication flows, coordination, and statutes, and governing bodies to review and update organizational policies, strategies, and accountability
- Legal framework and procedures

❑ *Management of research programs*

- Research planning based on priorities and identified needs
- Preparation of research budgets, work plans, and project statements that include clear objectives and indicators for measuring progress and success
- Efficient implementation of programs and activities
- Using evaluating results to improve future research in a timely manner
- Making timely decisions and taking corrective actions
- Monitoring progress
- Integration of new topics and approaches in the research agenda (i.e. natural resource management and the inclusion of biotechnology and participatory research approaches)

❑ *Management information systems*

- Making information accessible on the external environment, resources, activities, and results, so managers can make informed decisions and satisfy external administrative and accountability requirements

❑ *Management and dissemination of information*

- Acquiring, storing, cataloging, reporting, and disseminating scientific information so that researchers can conduct quality research

❑ *Human resource management*

- Training and career development processes that strengthen staff capacity
- Adequate remuneration and incentives
- Recruitment, supervision, evaluation, and promotion processes that support the organization's objectives

❑ *Financial management and accountability*

- Transparent financial system that allows timely accessing, disbursement, and reporting of use of funds, based on organizational objectives, priorities, and accountability requirements

❑ *International and local linkages and networks*

- Systematic links with farmers, other clients, and stakeholders, including other research institutions, extension programs, government agencies, NGOs, the private sector, networks, and regional organizations

❑ *Organizational culture, staff commitment, and loyalty*

- Support of staff for the organization's mission, objectives, and values
- Staff willingness to defend the organization and its leaders when threatened (e.g., by budget cuts) and to overcome organizational problems
- Organizational culture consistent with the organization's prevailing norms, beliefs, traditions, and values

Annex 4.2 Telephone Survey Instrument

Hello, my name is_____

As you are aware from the letters that have been sent to you recently from ISNAR (International Service for National Agricultural Research), we are conducting a survey of national agricultural research organizations with which ISNAR has worked.

We would like to discuss with you the results and impacts of ISNAR's activities and outputs in strengthening research organizations and systems. The results of this survey will be used to analyze ISNAR's achievements, constraints, and impacts, however, your comments will be kept anonymous.

Before we begin, I would like to thank you for taking the time to participate; this will take approximately 30 minutes. Is this time still convenient for you?

Background Information

1. Your full name is:_____
2. The full name of your organization is:_____
3. Your position is:_____
4. The country in which you operate is:_____

5. What is the role of your organization in the national agricultural research system?_____
   _____
   _____
   _____

Part 1

6. How would you describe your organization's relationship with ISNAR?

_____
_____
_____
_____

In particular, for how long and in what kinds of activities has ISNAR been involved with your organization? Number of years:_____ Don't know_____

Types of activities:

_____
_____
_____
_____

Continued

Continuation

7. Over the years, what specific products and services (e.g. training, publications, advisory support) has ISNAR contributed toward strengthening the NARS of [name of country]:
   _____
   _____
   _____
   _____?

Don't know _____

***Attention**: If the respondent answers "Don't know" to Questions 6 & 7, terminate interview by asking for someone in the organization more familiar with ISNAR's work.*

1._____
2._____
3._____
4._____
5._____

As was outlined in the letter sent to you, we have identified 10 areas, or areas of management, that affect the performance of agricultural research and policy organizations. Now, I would like to ask you about ISNAR's research, publications, training, or advisory services provided over the years and ask you to indicate whether they have affected, either positively or negatively, your organization and the national agricultural research system (NARS) in your country. We would like your views on each area. If you think it might be useful, please feel free to refer to the fax listing the areas as we discuss them.

Area 1 relates to the formulation and implementation of agricultural research policy. It includes aspects such as setting broad research goals and priorities; alignment of research objectives with development goals and strategies; taking action to change these goals where appropriate.

8. Based on your experience, how would you rate ISNAR's contribution to the formulation and implementation of agricultural research policy in your country? Using a scale of 1–5, where 1 is a very negative impact, 2 is a negative impact, 3 is no impact, 4 is a positive impact, and 5 is a very positive impact.

1. very negative_____
2. negative_____
3. no impact_____
4. positive_____
5. very positive_____
6. don't know_____

(If "no impact" or "don't know," go to Area 2.)

9. Please give examples of ISNAR's specific contributions, both positive and negative, in this area:

Positive:_____
Negative:_____

Area 2 relates to strategic and long-term planning. It includes aspects such as the development of strategic long-term plans or planning processes, consistent with national goals.

Continued

Continuation

10. How would you rate ISNAR's contribution to the strategic and long-term planning of agricultural research in your country? Using a scale of 1–5, where 1 is a very negative impact, 2 is a negative impact, 3 is no impact, 4 is a positive impact, and 5 is a very positive impact.

1. very negative_____
2. negative_____
3. no impact_____
4. positive_____
5. very positive_____
6. don't know_____

(If "no impact" or "don't know," go to Area 3.)

11. Please give examples of ISNAR's specific contributions, both positive and negative, in this area:

Positive:_____
Negative:_____

Now, area 3 relates to organizational structure and governance mechanisms and includes: defined role and responsibilities for operational units that facilitates communication flows, coordination, and accountability; legal framework and statutes, and governing bodies to review and update organizational policies, strategies, and procedures.

12. How would you rate ISNAR's contribution to the organizational structure and governance mechanisms in the national agricultural research system? Using a scale of 1–5, where 1 is a very negative impact, 2 is a negative impact, 3 is no impact, 4 is a positive impact, and 5 is a very positive impact.

1. very negative_____
2. negative_____
3. no impact_____
4. positive_____
5. very positive_____
6. don't know_____

(If "no impact" or "don't know," go to Area 4.)

13. Please give examples of ISNAR's specific contributions, both positive and negative, in this area:

Positive:_____
Negative:_____

Moving on to area 4, the effective and efficient management of research programs. It includes aspects such as research planning based on priorities and identified needs; preparation of research budgets, work plans, and project statements that include clear objectives and indicators for measuring progress and success; efficient implementation of programs and activities; using evaluating results to improve future research in a timely manner; making timely decisions and taking corrective actions; monitoring progress; integration of new topics and new approaches in the research agenda (i.e. natural resource management and the inclusion of biotechnology and participatory research approaches).

14. How would you rate ISNAR's contribution to the effective and efficient management of agricultural research programs in your country? Using a scale of 1–5, where 1 is a very negative impact, 2 is a negative impact, 3 is no impact, 4 is a positive impact, and 5 is a very positive impact.

Continued

Continuation

1. very negative_____
2. negative_____
3. no impact_____
4. positive_____
5. very positive_____
6. don't know_____

(If "no impact" or "don't know," go to Area 5.)

15. Please give examples of ISNAR's specific contributions, both positive and negative, in this area:

Positive:_____
Negative:_____

Area 5 relates to management information systems. It includes: Making information accessible on the external environment, resources, activities, and results, so managers can make informed decisions and satisfy external administrative and accountability requirements.

16. How would you rate ISNAR's contribution to the use of management information systems in the national agricultural research system? Using a scale of 1–5, where 1 is a very negative impact, 2 is a negative impact, 3 is no impact, 4 is a positive impact, and 5 is a very positive impact.

1. very negative_____
2. negative_____
3. no impact_____
4. positive_____
5. very positive_____
6. don't know_____

(If "no impact" or "don't know," go to Area 6.)

17. Please give examples of ISNAR's specific contributions, both positive and negative, in this area:

Positive:_____
Negative:_____

Moving on to area 6, the management and dissemination of information. It includes**:** Acquiring, storing, cataloging, reporting, and disseminating scientific information so that researchers can conduct quality research.

18. How would you rate ISNAR's contribution to the management and dissemination of scientific information in the national agricultural research system? Using a scale of 1–5, where 1 is a very negative impact, 2 is a negative impact, 3 is no impact, 4 is a positive impact, and 5 is a very positive impact.

1. very negative_____
2. negative_____
3. no impact_____
4. positive_____
5. very positive_____
6. don't know_____

(If "no impact" or "don't know," go to Area 7.)

19. Please give examples of ISNAR's specific contributions, both positive and negative, in this area:

Positive:_____

Negative:_____

Continued

Continuation

Area 7 relates to human resource management. It includes aspects such as training and career development processes that strengthen staff capacity; adequate remuneration and incentives; recruitment, supervision, evaluation, and promotion processes that support the organization's objectives.

20. How would you rate ISNAR's contribution to human resource management in national agricultural research organizations? Using a scale of 1–5, where 1 is a very negative impact, 2 is a negative impact, 3 is no impact, 4 is a positive impact, and 5 is a very positive impact.

1. very negative_____
2. negative_____
3. no impact_____
4. positive_____
5. very positive_____
6. don't know_____

(If "no impact" or "don't know," go to Area 8.)

21. Please give examples of ISNAR's specific contributions, both positive and negative, in this area:

Positive:_____
Negative:_____

Now Area 8, which relates to financial management and accountability. It includes a transparent financial system that allows timely accessing, disbursement, and reporting of use of funds, based on organizational objectives, priorities, and accountability requirements.

22. How would you rate ISNAR's contribution to financial management and accountability in national agricultural research organizations? Using a scale of 1–5, where 1 is a very negative impact, 2 is a negative impact, 3 is no impact, 4 is a positive impact, and 5 is a very positive impact.

1. very negative_____
2. negative_____
3. no impact_____
4. positive_____
5. very positive_____
6. don't know_____

(If "no impact" or "don't know," go to Area 9.)

23. Please give examples of ISNAR's specific contributions, both positive and negative, in this area:

Positive:_____
Negative:_____

Area 9 relates to international and local linkages and networks. It includes systematic links with farmers, other clients, and stakeholders, including other research institutions, extension programs, government agencies, NGOs, the private sector, networks, and regional organizations.

24. How would you rate ISNAR's contribution to international or local linkages and networks for national agricultural research organizations? Using a scale of 1–5, where 1 is a very negative impact, 2 is a negative impact, 3 is no impact, 4 is a positive impact, and 5 is a very positive impact.

Continued

Continuation

1. very negative_____
2. negative_____
3. no impact_____
4. positive_____
5. very positive_____
6. don't know_____

(If "no impact" or "don't know," go to Area 10.)

25. Please give examples of ISNAR's specific contributions, both positive and negative, in this area:

Positive:_____
Negative:_____

And finally, area 10, which relates to organizational culture, staff commitment, and loyalty. It includes aspects such as support of staff for the organization's mission, objectives, and values; staff willingness to defend the organization and its leaders when threatened (e.g., by budget cuts) and to overcome organizational problems; organizational culture consistent with the organization's prevailing norms, beliefs, traditions, and values.

26. How would you rate ISNAR's contribution to the organizational culture and staff commitment and loyalty in the national agricultural research organizations? Using a scale of 1–5, where 1 is a very negative impact, 2 is a negative impact, 3 is no impact, 4 is a positive impact, and 5 is a very positive impact.

1. very negative_____
2. negative_____
3. no impact_____
4. positive_____
5. very positive_____
6. don't know_____

(If "no impact" or "don't know," go to Question 28.)

27. Please give examples of ISNAR's specific contributions, both positive and negative, in this area:

Positive:_____
Negative:_____

Part 2

28. We have discussed ISNAR'S contributions in a number of policy and management areas. Which of these or any other areas would you say are currently the priority areas where further work is needed for strengthening national agricultural research in your country?

[N.B.: Not necessary for the interviewee to rank each area—simply check off the areas that are mentioned. If the interviewee comments on areas other than those listed, please note them in the "other" section.]

_____ 1) Formulation and implementation of agricultural research policy
_____ 2) Strategic and long-term planning
_____ 3) Organizational structure and governance mechanisms
_____ 4) Management of research programs
_____ 5) Management information systems
_____ 6) Management and dissemination of scientific information

Continued

Continuation

_____ 7) Human resource management
_____ 8) Financial management and accountability
_____ 9) International and local linkages and networks
_____ 10) Organizational culture, staff commitment, and loyalty
_____ 11) Other:

Now we would like you to think about the main constraints or problems your organization may be facing in obtaining and utilizing ISNAR's products and services.

A) Are there any constraints related directly to ISNAR?

(e.g. quality or availability of personnel, publications, or services)

1)_____
2)_____
3)_____
4)_____

B) Are there any constraints related more broadly to CGIAR (Consultative Group on International Agricultural Research) or international agricultural research and development efforts?

(e.g. lack of CGIAR funding, CGIAR's mode of operation)

1)_____
2)_____
3)_____
4)_____

C) Are there any constraints within the NAROs (national agricultural research organizations) themselves?

(e.g. lack of staff awareness or time, inadequate linkages with stakeholders, resistance to change)

1)_____
2)_____
3)_____
4)_____

D) And, finally, are there any constraints related more broadly to the NARS (national agricultural research system) and to the national environment?

(e.g. lack of funding or support for the agricultural research system, rigidities in the public sector)

1)_____
2)_____
3)_____
4)_____

Continued

Continuation

30. In summary, would you say that ISNAR's overall impact on the performance of your organization and the national agricultural research system was:

1. very negative_____
2. negative_____
3. no impact_____
4. positive_____
5. very positive_____
6. don't know_____.

31. In comparison with the various organizations that have contributed to strengthening the capacity of your national agricultural research system, how would you rate the quality and quantity of ISNAR's contributions?

A) In <u>quality</u> has it been:

Much greater than others	1
Greater than others	2
The same as others	3
Less than others	4
Much less than others	5

B) In <u>quantity</u>, has it been

Much greater than others	1
Greater than others	2
The same as others	3
Less than others	4
Much less than others	5

32. Would you like to make any final comments regarding ISNAR, or suggest ways for ISNAR to improve its performance and contribution to strengthening national agricultural research systems?_____

_____
_____
_____
_____
_____
_____

On behalf of ISNAR and IDRC,

I would like to thank you again for participating in this survey and

for giving us the benefit of your insights into ISNAR's work in your country.

Annex 4.3 Countries and Organizations in which Agricultural Research Leaders Were Interviewed

Regional, national, state, or provincial agricultural research systems, organizations, or centers:

Argentina	INTA	Gambia	NARI	South Africa	ARC
Benin	INRAB	Ghana	CSIR	Sri Lanka	CARP
Bhutan	MA DNRMA	India	ICAR	Swaziland	MRS
Botswana	EMBRAPA	Indonesia	CRIFC	Tanzania	BD
Brazil	IAPAR	Jamaica	MAMF		MA
	CNRST	Kenya	KARI (4)	Thailand	NCGEB
Burkina Faso	IERA		KNFU	Togo	DNRA
	INIA	Lesotho	DAR	Trinidad-	CARDI (2)
Chile	CORPOICA	Malawi	DAR	Tobago	
Colombia	CATIE	Maurice Is	MSI	Tunisia	IRESA
Costa Rica	Not reported	Mexico	INIFAP	Uganda	MU
	ARI	Morocco	DA		NARO (2)
Cyprus	FDA	Mozambique	INIA		UNCST
Dominican		Nicaragua	INIA	Uruguay	INIA
Republic	FUNDARIO	Niger	INRAN	Venezuela	FONAIAP
Ecuador	INIAP	Panama	IDIAP	Western	IRETA
	CNTAF	Paraguay	DIA	Samoa	
El Salvador	DRE	Peru	INIA	Zambia	MAFF
Eritrea	IAR	Philippines	PCARRD	Zimbabwe	MLAWD
Ethiopia	PGRC	Sierra Leona	NARCC		

Other institutions:

IFPRI (USA)
NAARM (India)
INRA (France)
PROCIANDINO (Andean region)

Annex 5.1 List of Persons Contacted in Kenya

Government ministries

Dr. K. Guitu	Director – Ministry of Planning and Development
Dr. W.K Ngulo	Director – Department of Research Development, Ministry of Research, Technology and Technical Training (MRTTT)
Dr. T.K. Tuei	Director – Department of Agriculture, Ministry of Agriculture, Livestock Development and Marketing (MOALDM)
Mr. J.B. Mubiru	Director – Department of Extension, MOALDM

Semi-Public research organizations

Dr. Ing. H.L. Kaane	Director – Kenya Industrial Research Development Institute (KIRDI)
Mr. J.O. Odiro	Research Officer – Food Technology Division, KIRIDI
Dr. W.R. Opile	Director of Research – Coffee Research Foundation (CRF)
Dr. D.M. Masaba	Senior Principal Research Officer, CRF
Mr. J.K. Rutto	Director – Tea Research Foundation (TRF)
Mr. W.G.M. Ottaro	Chief Agronomist – Pyrethrum Board of Kenya

Academic institutions

Dr. R.K. Obura	Director of Training – Crop Management Research and Training (CMRT), Egerton University
Dr. F.K. Lelo	PRA Project Coordinator – Egerton University
Dr. Nguyo	Policy Analysis Matrix – Egerton University
Prof. Mukunya	University of Nairobi

Donor organizations

Mr. Ndegwa	The World Bank, Nairobi
Dr. M. Mullei	USAID, Nairobi
Dr. J.A. Sutherland	Field coordinator, KARI/KETRI/ODA Research Management & Coordination Project
Dr. R.E. Hudgens	MIAC/Systems Agronomist/Chief of Party KARI/NARP

International agricultural research centers

Dr. P. Ewell	Regional Coordinator – International Potato Center (CIP)
Dr. E. Zulberti	Director of Training and Information – International Center for Research in Agro-Forestry (ICRAF)
Dr. H. Fitzhugh	Director General – International Livestock Research Institute (ILRI)
Dr. H.R. Herren	Director General – International Center for Insect Physiology and Ecology (ICIPE)

Private research organizations

Mr. Muthangaya	Chief Agronomist – Kenya Breweries, Ltd.

Farmers' associations

Mr. Waweru	Executive Officer – Kenya National Farmers' Union (KNFU)
Mr. Barasa	Deputy Officer – KNFU

Non-governmental organizations

Mr. W.W. Wapakala	Kenya Country Representative – FARM Africa; also former Deputy Director of KARI

KARI headquarters

Dr. C.G. Ndiritu	Director
Dr. A. Mailu	Deputy Director – Crop, Soil & Water Management
Mrs. L. Kimani	Assistant Director – Training
Mr. H. Ondanto	Training Division
Dr. J. Mureithi	Assistant Director – Regional Research Center Coordinator
Dr. R. Kiome	Assistant Director – Donor Coordination
Dr. S. Wafula	Assistant Director – Animal Health & Biotechnology
Dr. A. Mbabu	Assistant Director –Agricultural Economics
Mrs. L. Wambugu	Socioeconomist, Agricultural Economics Division
Mr. E. Onsongo	Agricultural Economics Division
Dr. A. Mbadi	Assistant Director – Finance
Mr. J. Matata	Coordinator – Agricultural Research Fund

National Agricultural Research Laboratory – Kabete – KARI

Dr. J.N. Qureshi	Center Director
Ms. S. Obanyi	Research Officer II – Agronomy
Mr. P. Kathuli	Research Officer I – Soil Fertility
Mr. D. Kilambio	Coordinator – Priority-setting Exercise

National Research Center – Muguga – KARI

Dr. J. Kahambura	Deputy Center Director
Dr. J.O. Mugah	Research Officer
Mr. N. Odongo	Research Officer
Mr. F. Musembi	Research Officer

National Research Center – Katumani – KARI

Dr. J.K. Itabari	Deputy Center Director
Dr. S.N. Nguluu	Research Officer – Soil Fertility
Dr. B.M. Ikombo	Research Officer – Soil Fertility
Mr. S.K. Kitheka	Research Officer – Soil and Water Conservation
Mr. L.M. Kimotho	Research Officer – Maize Agronomy

Regional Research Center – Kakamega – KARI

Dr. O.M. Odongo	Deputy Center Director
Mr. J.O. Odenya	Agronomy, Research–Extension Linkage
Mr. M. Odendo	Agricultural Economics
Miss B.O.S. Salasya	Agricultural Economics
Mr. M. Mudehen	Biometrics
Mr. R.M. Otsyulu	Plant Breeding
Mr. C.O.A. Oduori	Plant Breeding

National Horticultural Research Center – Thika – KARI

Mr. D.O. Michieka	Center Director
Mr. C.N. Gathungu	Deputy Center Director
Dr. G.G. Madumadu	Project Coordinator – Horticultural crops
Ms. M. Kamau	Socioeconomics
Ms. S.M.W. Munene	Socioeconomics

Annex 6.1 Persons Interviewed in Morocco

INRA Rabat

Arifi Abdelaziz, Director
Kamel Mohammed, Secretary General
Kissi Ali, Inspector General
Kohen Mohammed, Head, Dept. of Computing and Biostatistics
El Aouni Abderraouf, Chief, Division of Administrative Affairs
El Hilali, Abdelouahed, Chief, Division of General Affairs
El Idrissi Ammari, Chief, Division of Information and Training
Zouttane El Madani, Chief, Program Division
Rahim M'barek, Chief, Division in Charge of Regional Centers
Kradi Chafik, Chief, Coordination Service
Lamsellek Habiba, (Tripartite Project Module 1)
Balghiti, M. (Tripartite Project Module 2)
Zeddaoui, M. (Tripartite Project Module 3)
Hilali, M. (Tripartite Project Module 4)
Khradi, Chafik (Tripartite Project Module 5)

Advisor to the Ministry of Agriculture

Faraj H., Advisor to the Minister, and Ex-Director, INRA

Meknes

Abderabihi M., Chief, Regional Center, Meknes
Idrissi Raghini M., Chief, Research-Development, Meknes
Oumeklou, M., Regional Office of Agriculture, Meknes
Benhalima Thami, Director, National School of Agriculture (ENA)
Boulif Mohammed, Secretary General, ENA

Rabat

Firdawcy Mohamed Larbi, Director of Direction de l'Enseignement, de la Recherche et du Developpement (DERD)
Ben Henia M., Head, Section for Higher Education, DERD
Serati, M., Director, Institute for Agriculture and Veterinary Science, IAV Hassan ll
Guessous Fouad, Secretary General, IAV Hassan ll
Ameziane Tayeb, Professor of Agronomy, IAV Hassan ll

Marrakech

Janati Ahmed, Chief, Regional Center, Marrakech
Sillou Mohammed, Chief, Research-Development, Marrakech
Hilal, Abdelkader, Chief, Olive Research Program, Marrakech
Ameziane El Hassani A., Chief, Date Palm Research Program, Marrakech

Kenitra

Lyamani Abderrahmane, Chief, Regional Center, Kenitra
Bouafia Ahmed, Chief, Service Research-Development, Kenitra

Annex 8.1 List of ISNAR Review Reports

1. Proyecto para el fortalecimiento de la administracion de la investigacion agropecuria en America Latina y el Caibe: informe de la evaluacion final, (in Spanish only), July 1994.
2. External Review of INFORM's Program, November 1994.
3. Intermediary Biotechnology Service: Mid-term Evaluation Report, September 1995.
4. Guidelines for the External Review of the ISNAR Indicators Series and the Report of the External Review (2 documents), March 1996.
5. Report of the ICER of ISNAR Comprehensive Institutional Development Programme in Uganda, May 1996 (and letter from J. Nickel to CG Chair).
6. ICER Report: KARI/ISNAR Agricultural Research Management Linkage Project in Kenya, June 1996.
7. Internal Program Review – The Hague, November 28, 29, and 30, 1995; Main Issues and Recommendations, 1995 (ISNAR).
8. Internal Program Review – The Hague, October 3–4, 1994 (ISNAR).
9. Report on the Internal Program Review, November 10–12, 1992 (ISNAR).
10. Report on the Impact Assessment of the SACCAR/ESAMI/ISNAR Agricultural Research Management Training Project, October 1994.
11. Highlights of Issues and Recommendations from the 1993 Internal Program Review.

Annex 8.2 Criteria for Assessment of ISNAR Review Reports

1. Audience
   - The evaluation clearly identifies the audience being served by the document.
2. Purpose
   - The evaluation provides the reader with a statement of purpose and the objectives of the evaluation.
3. Quality of questions being explored
   - The terms of reference are converted into clear evaluation questions that are either descriptive (what is), normative (what should be) or are impact (cause and effect).
4. Methodology
   - A clear evaluation design is put forth with an appropriate rationale.
   - Sources of information, samples, and instruments are identified.
   - Methods for data collection are provided.
   - Analysis plan is communicated and implemented.
   - Basis for judgment is put forward with appropriate rationale.
5. Accuracy
   - Reliable and valid data is gathered to provide answers to questions.
   - Data is put in appropriate context.
   - Information used is defensible.
   - Analysis of data is appropriately carried out and used.
6. Report quality
   - TORs and questions answered.
   - An executive summary is written.
   - Findings and conclusions are backed by data.
   - The report fits the audience.
   - Is written using an impartial style.
7. Report use
   - Recommendations are made and directed to the appropriate person or organization.
   - There are suggested timelines and cost estimates.
   - There are priorities given with the recommendations.

Annex 8.3 Worksheet for Assessment of ISNAR Review Reports

Criteria	Frequency	Comments
Audience	Identified in very few cases.	Identified audiences are mostly organizations, rather than centers of responsibility within them.
Purpose	One-third had good statement of purpose.	"Assess," "review," "better appreciate" are not adequate as purposes.
Questions	About half the reports clearly identified evaluation questions.	In two cases questions identified in the TORs were not addressed in report.
Methodology	About half discussed methodology.	Cursory treatment. List info sources and data collection methods such as file & document review, interviews, questionnaire, etc.
Accuracy	Less than one-third had data with which to assess accuracy.	Data presented very limited; none quantitative.
Report quality	More than half were poor.	Overall rating as per criteria listed in Annex 8.2.
Report use	One-third were targeted to appropriate user.	No attention to weighting or priorities in the recommendations. As few reports identified users, one would expect limited utilization of findings.